

# THE BRITISH JOURNAL

OF

## TUBERCULOSIS

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### EDITORIAL.

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#### TUBERCULOSIS AND THE POOR LAW.

TUBERCULOSIS, poverty, and pauperism are closely linked. The truth of this statement is fully demonstrated in the important articles which we are able to publish in the present number. The poverty-stricken provide a never-failing supply of followers for the Captain of the Men of Death. Large numbers of those smitten by tuberculosis are reluctantly but remorselessly driven into pauperism. Tuberculosis and poverty are national evils ever acting and reacting. The relationship is often so intimate and intricate that it is frequently almost impossible to decide which should be viewed as cause and which must be dealt with as effect. When it is remembered that one-third of the mortality among adult workers is due to consumption, some faint idea may be formed of the bankruptcy of individual powers, the impoverishment of family life, and the far-reaching loss to our national resources, due to this devastating scourge of humanity. Some of our philanthropic institutions which care for destitute children find that no less than 25 per cent. of their little charges are orphaned through this disease. A vast amount of pauperism is the product. Every year an enormous number of consumptives pass into our workhouse infirmaries. The annual death-roll of these unfortunates affords merely a fractional indication of the great army of tuberculous derelicts dependent on charity and State support. By universal admission, our Poor Law system has been found sadly lacking, and with regard to no class has this failure been more conspicuous, deplorable, and inexcusable than

in the case of the destitute consumptive. Dr. Arthur Newsholme has expressed the view that the segregation of considerable numbers of consumptives in workhouses and Poor Law infirmaries has been an important factor in the diminution of the national death-rate from pulmonary tuberculosis. The period during which a consumptive may be considered to be infective varies greatly, but there is good evidence to show that three years may be accepted as a fair average. For the majority of these chronic cases the State does little or nothing. The victims are left to struggle and to suffer, dragging into destitution and disease their families and friends, and only too frequently multiplying the evil by the propagation of delicate and tuberculously disposed children. The condition of large numbers of advanced and helpless consumptive cases is deplorable. Living in close and constant association with other members of their family, regardless or ignorant of all essential hygienic procedures, adding heavy burdens to the already inadequate financial resources of the home, little wonder that fatal seed and favourable soil thus brought into association gives a harvest of domestic disaster and national deterioration.

Those who work among the consumptive cases of our metropolitan and provincial hospitals and sanatoria know well the dread which these patients have of the Union infirmary, and their absolute refusal in most cases to resort to Poor Law relief. No satisfactory advance towards the elimination of this Great White Plague can be effected until rational means are found for the effective segregation and proper care of those infectious consumptive cases for whom no other aid is possible than that which should, and must be, provided by the State. Arguments and suggestions contained in the articles appearing in the present number of this journal will be found to indicate lines for reasonable reform. It is to be hoped that the Royal Commission now considering our Poor Law system will give special attention to this subject.

### **CONSUMPTION AND THE POSTAL AND TELEPHONE SERVICES.**

Anti-tuberculosis measures might well find their fullest expression and most encouraging results in our State services and other forms of organized labour. For some time it has been known that tuberculosis was only too prevalent among the employés of our Imperial postal service. Why consumption should develop so frequently among those who must be regarded as "picked lives," and should be working under well-ordered and supervised hygienic conditions, it is difficult to say. Considerable light, however, is thrown upon the subject in the very informing and suggestive article contributed to this number by Dr. T. D. Lister and Mr. Charles H. Garland. The

subject is clearly one of such national importance as to merit the most thorough inquiry. We could wish that at the same time it might be possible to investigate the state of public telephones. The telephone apparatus in call-offices is often in a deplorably filthy condition. Mouthpieces are constantly found dripping with the condensed breath of previous users, of foul odour, and indescribably dirty. Call-boxes are commonly placed in dark, unventilated corners; the air in them stagnant, and sometimes stinking; they are rarely or never properly aired, and, judging from the appearance of the floors, seldom cleaned. In short, these public call-boxes are incubators for disease; and as recent investigations have clearly demonstrated that many receivers are receptacles of tuberculous material, it is no exaggeration to say that the neglected, unhygienic telephone may be of ætiological importance in spreading consumption. The least that should be done would be to provide for the adequate airing and proper disinfection of all public telephones. This is a subject which should receive the attention of all Medical Officers of Health in London and other populous centres.

#### TUBERCULOSIS AMONG LAUNDRY WORKERS.

The study of tuberculosis in relation to occupation is a subject of the greatest practical importance. By the supervision of dangerous trades much is being accomplished towards the extermination of many serious diseases. This is particularly true in regard to pulmonary tuberculosis.

Professor Thomas Oliver, in his recently published work on "Diseases of Occupation," draws attention to the much greater liability to consumption evidenced by laundry workers than women following other employments. It would seem that in the Clapham Infirmary of the Wandsworth Union, one in every eleven laundresses was the subject of pulmonary phthisis, while among female patients who had not been engaged in laundry work the proportion was one in nineteen. In the Isleworth Infirmary the numbers were one in ten and one in twenty respectively. The experience of Professor Landouzy, of the Hôpital Laennec, goes to show that Parisian laundresses suffer from tuberculosis in much the same way as do London laundry workers. Surely the causal factors contributing to this high death-rate from tuberculosis among laundry workers calls for thorough investigation. Dr. Oliver mentions as contributing causes the hard nature of the work, repeated pregnancies, bad hygienic conditions of the laundries, poor feeding, the intemperate use of alcohol, but mainly infection, "to which the workers succumb often after eight or ten years of service." This infection seems to occur from the inhalation of dried

bacilliferous dust. Dr. Oliver claims that all infected clothing should at once be placed in a tank containing water and some such antiseptic as cyllin.

### HEREDITY AND TUBERCULOSIS.

In the pursuit of the problems connected with the infectivity of tuberculosis, pathologists and physicians have during recent years too much neglected the scientific study of the relationship of heredity to the disease. The researches of such non-medical investigators as Professor Karl Pearson and Professor Arthur Thomson have done much to arouse interest and quicken study in regard to this important matter. The latter writer, in his new and brilliant work on "Heredity," deals with the problem in a peculiarly attractive and informing manner, and his conclusions are so well expressed that we venture to quote them: "Besides the transmission of a constitutional vulnerability, besides the rare occurrence of ante-natal infection, besides the likelihood of household infection, besides the persistence of conditions of life which favour the disease—are there any other factors? There are probably two others. On the one hand, a seriously tubercular mother may be unable adequately to nourish her offspring before and after birth, and the ill-nourished offspring becomes the more readily the prey of disease. On the other hand, it seems likely that the bodily disturbances induced by tubercular disease in the parents may prejudicially affect the vigour of the germ-cells themselves, and thus lead to the production of inferior offspring."

Sir William Whitla, in his new "Practice and Theory of Medicine," recalls instances in which one young member after another of a large family in a small Irish homestead was compelled to push out abroad into different climates, and where each died of phthisis at middle-age or beyond it. "In one remarkable case twelve members succumbed in this manner, though several of them had left home before their successors were born, and some lived to the age of forty." Sir William suggestively points out that in some cases "the disease may resemble a family disease and not an hereditary one, in so far that both parents may survive their entire offspring and die at extreme old age, the predisposition being transmitted, as in the case of bleeders, by one or other or both of them."

Considerable attention has very wisely been devoted to the characters of the tuberculous seed. It is equally important, however, that thorough scientific investigations should be undertaken with regard to the characteristics, both inherited and acquired, of the tuberculous soil.



## SPECIAL ARTICLES.

TUBERCULOSIS AND PAUPERISM IN  
IRELAND.

By ALFRED E. BOYD,

M.B., D.P.H.,

Hon. Sec. Dublin Branch of the National Association for the Prevention of Tuberculosis and of the Central Tuberculosis Exhibition Committee for Ireland.

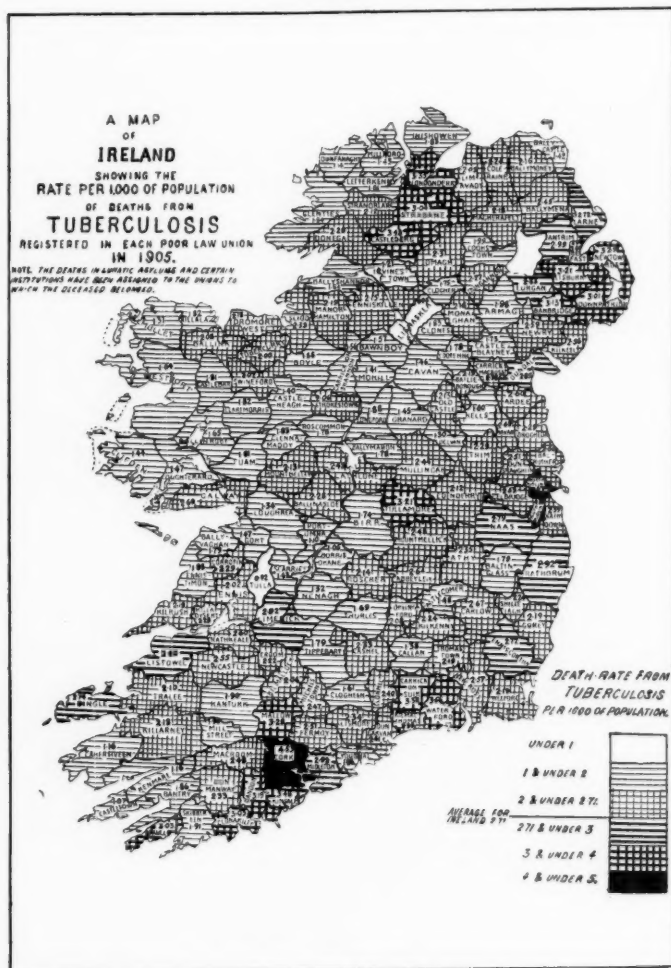
THROUGH the courtesy of Sir Robert Matheson, LL.D., Registrar-General for Ireland, and with the sanction of the Controller of His Majesty's Stationery Office, I am enabled to include, in a short note on Tuberculosis and Pauperism in Ireland, reproductions of four diagrams, which display in a more striking manner than any words can express the distribution and prevalence of tuberculosis in Ireland.

DIAGRAM I. shows the geographical distribution of the disease in 1905. The map is divided according to Poor Law Unions, and shows that the North Dublin Union stands highest, with a death-rate from all forms of tuberculous disease of 4.76 per 1,000; in Cork Union it was 4.53 per 1,000; while the South Dublin Union shows a rate of 4.38. In sixteen Poor Law Unions the rate ranged between 3.0 and 4.0 per 1,000; in eleven Unions it exceeded 2.7, but was under 3.0, per 1,000; in sixty-eight Unions the mortality exceeded 2.0 per 1,000, but was under 2.7; in fifty-nine Unions it ranged from 1.0 to 2.0 per 1,000; while in two Unions—Lisnaskea in County Fermanagh, and Tulla in County Clare—the rate did not exceed 1.0 per 1,000. The average death-rate for all forms of tuberculous disease for Ireland in 1905 was 2.7 per 1,000.

DIAGRAM II. demonstrates the predominance of tuberculosis over all other causes in Ireland in 1906. In that year it claimed 11,756 victims—15.8 per cent. of the total death-rate of the country. Of these 11,756 deaths, 8,933 were due to phthisis.

DIAGRAM III. shows that while in England and Wales the death-rate from this cause has declined from 3.3 per 1,000 in 1864 to 1.6 per 1,000 in 1905, and in Scotland from 3.6 per 1,000 in 1864 to 2.1 (unrevised figures) per 1,000 in 1905, it has risen in Ireland from 2.4 per 1,000 in 1864 to 2.9 in 1904, and to 2.7 per 1,000 in 1905 and 1906.

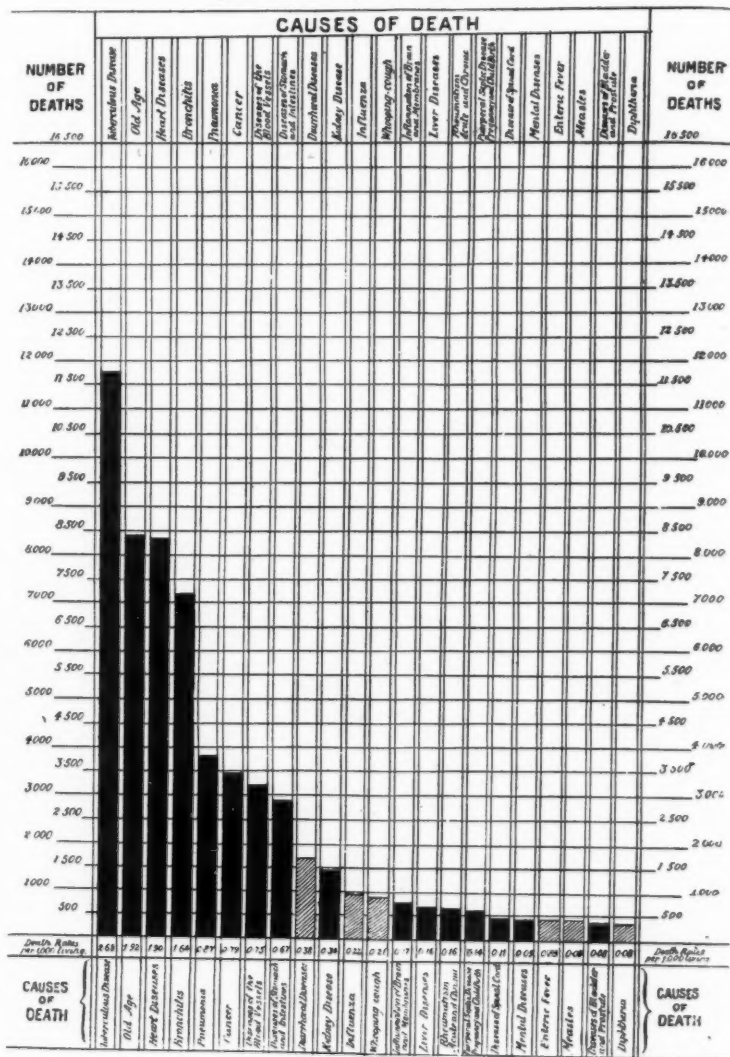
DIAGRAM No. 1.—Map indicating the Distribution of Tuberculosis in Ireland in 1905.



Reproduced from the Forty-second Annual Report of the Registrar-General for Ireland, by the special permission of the Controller of His Majesty's Stationery Office.

**DIAGRAM No. 2.—Showing the Mortality from Twenty-two of the Principal Causes of Death in Ireland in the Year 1906, which exhibits the enormous Death-rate from Tuberculosis, as compared with the Death-rates from the other Principal Causes of Death.**

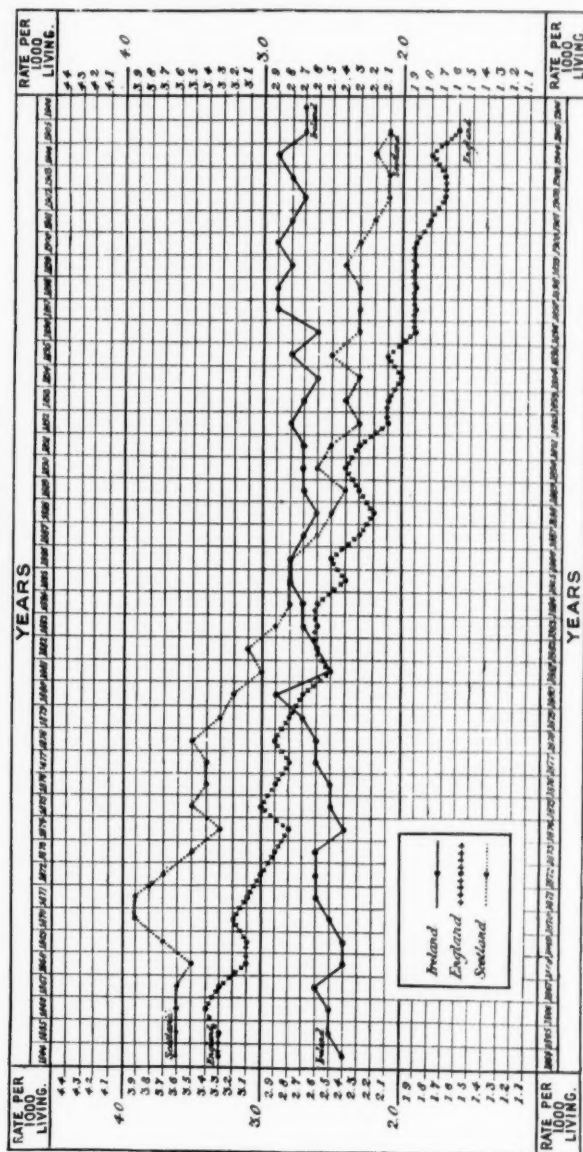
N.B.—The deaths from tuberculosis far exceed the total deaths from the principal epidemic diseases, including influenza.



\* Epidemic diseases.

Reproduced from the Forty-third Annual Report of the Registrar-General for Ireland, by the special permission of the Controller of His Majesty's Stationery Office.

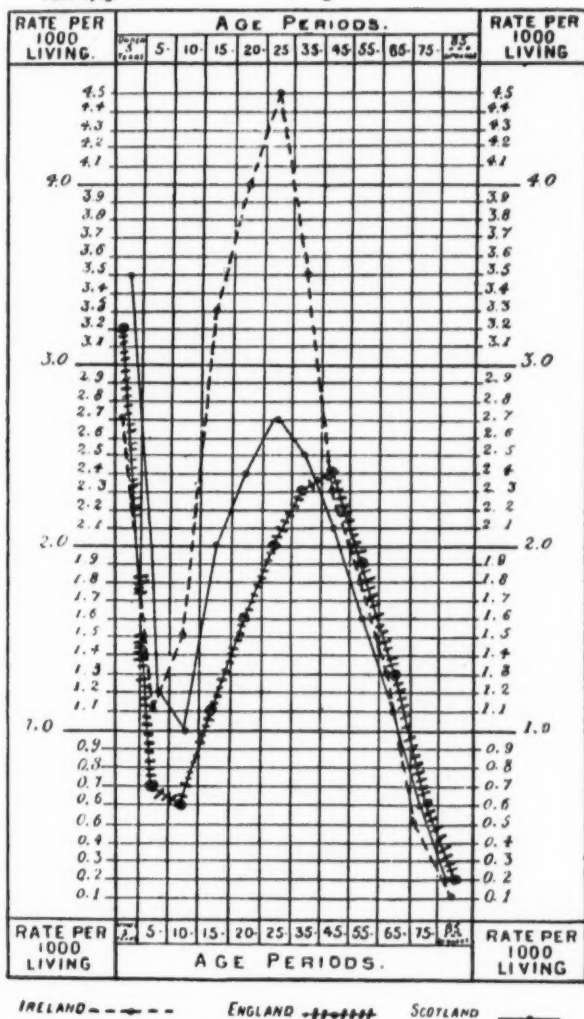
DIAGRAM No. 3.—Showing the Death-rate in Ireland from Tuberculosis, as compared with that for England and Scotland, during each of the Forty-three Years, 1864-1906.



Reproduced from the Forty-third Annual Report of the Registrar-General for Ireland, by the special permission of the Controller of His Majesty's Stationery Office.

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DIAGRAM No 4 - Showing the Proportion of Deaths from Tuberculosis at each age period to the number per 1,000 living at those ages in Ireland, as compared with England and Wales and Scotland in the Year 1903.



Reproduced from the Forty-second Annual Report of the Registrar-General for Ireland, by the special permission of the Controller of His Majesty's Stationery Office.

DIAGRAM IV. displays the proportion of deaths from tuberculosis at each age period to the number per 1,000 living at those ages in Ireland as compared with England and Wales and Scotland in 1903. It reveals the fact that at the age periods from fifteen to forty-five years the mortality rate from tuberculosis is enormously higher in Ireland than it is in England and Scotland.

There are no statistics for the whole country showing the mortality from tuberculosis by occupations or social positions, but from the annual summary of the Registrar-General's weekly returns for the Dublin registration area for 1906 we learn that in that area, in the professional or independent class, the tuberculosis death-rate was 0·63; in the middle class it was 2·79; while among the artisans and petty shopkeepers it was 3·54, and in the general service class it was 4·12 per 1,000. Tuberculosis, then, is a disease primarily associated with poverty and its consequences, and if we are to deal with the problem of tuberculosis, we must at the same time deal with the problem of pauperism.

The amount of pauperism in Ireland may be roughly gauged by the following figures taken from the annual report of the Local Government Board (Ireland) for 1906-1907, which show the daily average numbers of persons in receipt of Poor Law relief during that year:

Indoor relief—				
In workhouses	...	...	...	42,829
In extern hospitals, institutions, and two district schools	...	...	...	1,493
Outdoor relief	...	...	...	56,861
Total daily average of cases relieved				101,183

The above numbers represent 1 in every 43 of the estimated population of the country at the middle of 1906, or 23 per 1,000; those relieved indoor being about 10, and those outdoor 13, per 1,000.

To deal with tuberculosis in a country afflicted with the appalling amount of poverty indicated by these figures is a national problem touching every scheme for social betterment.

Primarily we need legislative changes involving—

1. The introduction of a uniform system of compulsory notification of phthisis.
2. The appointment of County Medical Officers of Health.
3. The conferring on County Councils of power to erect and maintain segregation hospitals, sanatoriums, and dispensaries for the treatment of consumption as they deem fit.

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4. The adoption of more stringent and uniform measures for the regulation of milk and food supplies.

5. The systematic medical inspection of schools and school-children.

If we accept the dictum of Dr. Newsholme, that "segregation in general institutions must be regarded as having exerted a more powerful influence on the prevention of phthisis than any of the other factors," our great need is for the provision of segregation hospitals. This may be supplied, in a great measure, either by the County Councils under special powers to be sought from Parliament, or by the adoption of the recommendations of the Viceregal Commission on Poor Law Reform in Ireland, in their masterly report issued in 1906, wherein a scheme for the amalgamation of Unions was propounded, and a suggestion was made that some of the disused workhouses could be selected, and with a reasonable outlay might be converted into fairly efficient sanatoriums, or at least into segregation hospitals. The County Council scheme would be preferable, but, whichever may be adopted, cheapness is an essential, and any project involving a large capital outlay may be considered beyond the possibility of realization. Compulsory notification and the appointment of County Medical Officers of Health may be regarded as corollaries of a system of public control, while the need of the more stringent regulation of milk and food supplies, and the medical inspection of schools and school-children, are evident in regard to the prevention of the spread of the disease and its early recognition.

While much may be done, however, by legislative action, there still remains the necessity for educating public opinion and developing a national conscience in regard to the prevention of the disease. With this end in view, the National Association for the Prevention of Tuberculosis has been doing sound work for some years past, and the Women's National Health Association, founded last year by Her Excellency the Countess of Aberdeen, has given the movement a new impetus through the holding of tuberculosis exhibitions under its auspices all over Ireland. An era of hope has dawned, but it rests largely with the local committees, each in its own district, to convert the interest which has been aroused into action, by educating the people in the principles of fresh air and healthy living, by influencing public boards to do their duty in regard to public health administration and the housing problem, and by providing district nurses for the care and supervision of such cases as cannot obtain institutional treatment. They can also aid in the work of industrial development by encouraging the more general use of Irish manufactured goods at home. By so doing they will help to reduce the ghastly prevalence of poverty, which has hitherto rendered attempts towards social betterment so well-nigh



hopeless, and indirectly they will stem the tide of emigration by which Ireland loses each year about 40,000 of her sons and daughters, who are precluded by the present economic conditions from obtaining the means of livelihood at home. On this common platform all who love their country can unite in efforts to combat the combined evils of tuberculosis and pauperism in Ireland.<sup>1</sup>

## TUBERCULOSIS AND METROPOLITAN PAUPERISM.

BY F. S. TOOGOOD,

M.D., BARRISTER-AT-LAW,

Medical Superintendent of the Lewisham Poor Law Infirmary.

THE administrators of charitable funds, whether derived from benevolent sources or from the ratepayers' unwilling purse, have found the treatment of the Metropolitan consumptive a question of great complexity, involving many interests, and having numerous ramifications. The long duration of the illness, its infective character, the necessity for the assumption of some portion of the responsibilities of many of these unfortunate persons, together make the problem one of exceeding difficulty as well as of surpassing interest.

### Classification of Paupers.

Paupers may be roughly divided into three classes: (1) Tramps, or the frequenters of casual wards; (2) the indoor poor, or those who are cared for in schools, workhouses, and infirmaries; and (3) the outdoor poor, or those who obtain some assistance from the rates in the shape of outdoor relief.

Concerning the first class, my experience leads me to believe that consumption, or pulmonary tuberculosis, is not very prevalent amongst its members. All persons with Poor Law experience know that these

<sup>1</sup> The following references will probably prove of service to those desirous of investigating this subject further:

Annual Reports of the Registrar-General (Ireland), 1905 and 1906 (Cd. 3123 and Cd. 3663).

"Ireland's Crusade against Tuberculosis," lecture by Sir Robert Matheson, LL.D., on "Tuberculosis in Ireland." Dublin, 1908.

Annual Report of the Local Government Board (Ireland), (Cd. 3682), 1906-1907.

Newsholme, A., "An Inquiry into the Principal Causes of the Death-Rate from Phthisis during the Last Forty Years, with Special Reference to Segregation," *Journal of Hygiene*, July, 1906.

Report of the Viceregal Commission on Poor Law Reform in Ireland, Vol. I., (Cd. 3202), 1906.

tramps constitute a separate and well-defined group, wandering from one casual ward to another, ostensibly seeking work. They are actually members of a great conspiracy, whose aim is to take advantage of the arrangements made for the benefit of workmen seeking employment. The ordinary tramp has no intention whatever of performing any work beyond his official task. The establishment of the casual ward system has created a class of wanderers, natural vagabonds, who have taken possession of an organization established for a different purpose. To an outsider the life would appear to possess few attractions, yet it cannot be wholly uninviting, as, once entered upon, it is rarely relinquished until sickness necessitates either a temporary or permanent detention in the infirmary. It is impossible to estimate the prevalence of tuberculosis amongst these professional Ishmaelites. The occasions on which they are brought to the notice of the medical officer are practically three. The most frequent cause is refusal to perform the task as allotted by the superintendent of the casual ward; this necessitates an examination by the medical officer for the purpose of determining the fitness or unfitness of the person for the particular task. The attendance of the doctor is sometimes demanded by the tramp for some real or simulated ailment, and occasionally the superintendent may observe some manifest departure from health and report thereon to the medical officer. It is thus evident that a tramp may suffer from pulmonary consumption or any other tuberculous affection for years and yet may escape detection, the claustrophobic tendencies of this class impelling the nomadic wandering until the increasing weakness can be no longer concealed. It is, however, rare to meet with a case of pulmonary tuberculosis in the casual wards: one or two cases a year is a small number to detect out of a clientele of 15,000 visitors. It is possible, as I have shown, that the disease is more widely prevalent than these figures would indicate, in which case the peripatetic distributor of tubercle germs, fouling the highways with his filthy expectoration, is deserving of some notice in any forthcoming legislation upon the subject.

#### **Influence of Out-Relief.**

The lack of uniformity in dealing with the question of out-relief by the various Metropolitan Boards of Guardians makes it exceedingly difficult to hazard an opinion as to the prevalence of tuberculosis amongst the outdoor poor. Some Boards give out-relief with a lavish hand, and in these districts the consumptive will remain at home, a focus of infection distributing the possibilities of disease to all around him. Devoid of any attempt at supervision, ignorant of the elementary principles of hygiene, lacking the means as well as the knowledge of

rendering himself harmless to others, his continued freedom from intelligent supervision and control is a real source of infection to those in his immediate environment, and a menace to the health of the community at large.

The out-patient departments of the general and special hospitals in attempting to treat cases of tuberculosis deal only with the actual sufferer. Even if they supply the information, they are unable to exercise the control and supervision necessary to render the patient harmless to the community. They should at least be compelled to notify to the health authority of the district in which the patient resides. It would then be possible to exercise some measure of control over him and to educate him into comparative harmlessness.

The general hospitals admit comparatively few cases of consumption, and retain these but for a short period. Admission to the special chest hospitals and sanatoria for consumptives depends upon the acquisition of an in-patient's letter, an iniquitous and inhuman system. The length of time between the possession of a letter and actual admission to the hospital varies inversely with the importance and insistence of the donor. Sooner or later a large proportion of these hospital cases seek the aid of the Poor Law authorities. Either they become too weak to continue the weekly or fortnightly journey to the out-patient department of the hospital, or their inability to continue at work causes a stoppage of wages, and so necessitates an application for help. The method of dealing with these cases varies in different districts. Some Boards insist upon the patient entering the infirmary, and if he be a married man with a family, his entrance is made a condition precedent to their receiving any help. Other Boards will supply medical attendance and give a weekly dole of money, thereby enabling the patient to remain at large, a focus of infection for his family and neighbourhood. It is idle to expect the carrying out of measures designed to ensure the safety of others, when neither the patients nor their relatives are able to appreciate the necessity for their enforcement. It is my experience that, unless rigidly supervised, the class of persons with whom we have to deal is almost criminally careless in these matters. The frequent notices as to spitting in railway carriages and other public vehicles are almost entirely disregarded. The floor of a workmen's railway-carriage or an electric car is a sea of salivary effort. Penalties are threatened, but not enforced; the officials regard the practice with equanimity, and even share in it. I am strongly of opinion that a determined effort should be made to gather all consumptives into institutions unless their circumstances are such that adequate and efficient means of disinfection can be carried out at home.

**Poor Law Schools and Tuberculous Children.**

Of Poor Law institutions, the schools and scattered homes furnish very few cases of tuberculosis ; very occasionally a case of pulmonary tuberculosis or of bone or joint tubercle will arise, but the careful medical examination to which all children are subjected before being passed to these institutions, and the enlightened manner in which they are treated after admission, gives them the best of chances of escaping an attack.

I must not forget to state that the Metropolitan Asylums Board has at Broadstairs a hospital for tuberculosis in children, which has up to the present met all demands made upon it.

**Hygiene of the Workhouse.**

In the workhouses the hygienic conditions are far from perfect. All admissions are medically examined upon entrance, but once having passed this ordeal they need not again come under the official cognizance of the doctor unless they themselves complain of ill-health, or unless some unusually observant official notices something wrong.

The official dormitory cubic space for each able-bodied pauper is 300 cubic feet, and so long as that amount is not encroached upon, the question of changing the air in this not-too-generous space allowance does not trouble the official mind. In order that each person should have the usual 3,000 cubic feet of fresh air per hour, the air in the sleeping apartment would need changing ten times hourly. Even the most enthusiastic of "fresh-air fiends" would find this rather airy, and the ordinary workhouse inmate would not tolerate it. He is very great on the subject of draughts—any open window is closed at once ; and if this be rendered mechanically impossible, the aperture will be reduced by the stuffing in of the bulkiest articles of apparel obtainable. The admission of night air into a sleeping apartment is by many regarded as an act approaching impiety, and the sympathies of some members upon a Board are generally obtainable upon this point. I have striven for efficient ventilation in workhouses for over twenty years, and beyond acquiring a reputation for being a "fresh-air crank," I have achieved little. The condition of the air in these dormitories after a few hours is horribly offensive. The noisome stench has caused me to vomit when necessity has compelled me to visit these wards during the night. Chronic bronchitis is almost universal amongst workhouse inmates after middle age, and consumption is common.

Where large numbers of people are massed upon a small superficial area, the most careful attention to matters of cleanliness is essential, yet the class of people with whom we have to deal in workhouses

would speedily render the place uninhabitable were it not for the great vigilance and watchfulness exercised by the officials.

My morning inspection rarely fails to discover some scores of purulent expectorations, although abundant facilities for their safe disposition are easily accessible; indeed, it is difficult to avoid the conclusion that their deposit is deliberately misplaced.

In the past seventeen years I have known four officials of the workhouse to which I have been attached to be attacked by pulmonary tuberculosis. It is essential that no consumptive should remain in the ordinary wards of a workhouse, and in order to effect this, a periodical medical examination is imperative. Even doubtful cases should be transferred to the infirmary for observation.

#### **The Care and Control of London's Pauper Consumptives.**

How is the Metropolitan pauper consumptive dealt with? In answer to a recent inquiry from the Metropolitan Asylums Board, thirty-three replies were received from London Boards of Guardians, and in twenty institutions there has been a serious endeavour to isolate cases of pulmonary tuberculosis from the other patients, whilst in twelve only has there been any attempt to provide "open-air" treatment.

There are about 4,000 cases of consumption of the lungs admitted yearly into the London infirmaries, and about 2,500 deaths annually from the same disease. During the winter months there is a daily average of nearly 2,500 consumptive cases present in the wards. The daily cost of a phthisical patient is a little under 4s., as against 3s. 3½d. for an ordinary patient.

It must be remembered that there is a considerable seasonal variation in the number of consumptives present in the infirmaries; also that some of the cases figure as admissions on more than one occasion during the year. Some wander from infirmary to infirmary, with an occasional sojourn in a hospital or sanatorium when opportunity offers. There are some well-known characters who have converted the practice of getting admission into these institutions into a fine art. Sometimes they feign an attack of hæmoptysis, but usually a simulated paroxysm of dyspnœa attracts the public attention and ensures the assistance of a small crowd of sympathizers. Some of these actors are the fortunate possessors of an old and arrested tuberculous deposit, but others are unadulterated malingerers. Some have acquired the trick of forcing up the mercury in the thermometer, and in such cases a comparison of the temperatures registered in the mouth, axillæ and rectum yields embarrassing results.

Dr. Newsholme's view as to the diminution of the death-rate from phthisis being due to the greater measure of segregation of these

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consumptive cases in their later and most infective stages is, I think, in agreement with facts as far as I know them. The great improvement in infirmary accommodation, and in nursing and medical attention, dates from the separation of the infirmaries from the workhouses, which was effected about thirty years ago. The general hospitals are now not more efficiently administered than are the infirmaries.

### **Need for Centralization.**

The fact that London is for Poor Law purposes split up into more than thirty divisions is naturally a great hindrance to collective action. It is almost impossible to get unanimity upon any project. It would be hopeless to expect any concerted action upon the question of the establishment of sanatoria. If one Union were to make a beginning, the phthisical, not only from the other divisions of London, but also from the whole country, would speedily endeavour to take advantage of the establishment, and as the onus of proving removability rests upon the Union and not upon the individual, the effect would be to saddle the Union with a large number of cases whose "settlement" could not be proved, and who would, therefore, remain permanent charges. A considerable improvement in the treatment of phthisis has been effected in all the infirmaries in recent years. Structural disabilities in many instances prevent an absolute accomplishment of an "open-air" treatment, but where there are balconies or bridges, they have been taken advantage of and utilized to their full extent. In Lewisham a full "open-air" system has been in vogue for over ten years. Lack of surrounding space precludes any further approximation to a complete sanatorium treatment. It is not every patient who will submit to the necessary exposure, but those who are sufficiently adventurous improve in a marked manner. About 3 per cent. are apparently cured, whilst quite advanced cases lose their hectic temperatures and become much more comfortable, life being in most cases appreciably prolonged, although in the majority of cases the disease is far advanced before admission is sought. Most cases continue at work until further labour is impossible. An experience of twenty-two years in Poor Law infirmaries has convinced me that with ordinary precautions phthisis is not readily communicable from one person to another. During that time I can recall three medical officers in the whole of London who became phthisical, whilst in the infirmaries with which I have been connected only one nurse and one patient have contracted the disease.

### **Tuberculosis Census.**

By the kindness of Dr. A. H. Downes, Medical Inspector for Poor Law purposes for the Local Government Board, I am enabled to quote from returns prepared by him for the years 1900 and 1905.

On July 7, 1900, there were in Metropolitan infirmaries and workhouses 1,290 persons of all ages suffering from pulmonary tuberculosis, and 257 persons affected with tuberculous disease other than pulmonary, their lungs being free. Of those suffering from pulmonary tuberculosis, 895 were men, 356 were women, and 39 were children under the age of sixteen years.

In the initial stages of the disease described in the return as "Tuberculization or Consolidation," there were 409 men, 157 women, and 29 children. In the developed or advanced stages described under the heading of "Softening and Excavation," 486 were men, 199 were women, and 10 were children.

Of the whole number, 606 men, 197 women, and 22 children were medically fit for removal to a suitable sanatorium within fifty miles of London, if such were available.

The term "medically fit" is understood to mean that the patients would not be injuriously affected by the journey; it was not regarded as meaning that the cases would necessarily be appreciably benefited by sanatorium treatment.

Of those suffering from tuberculous disease other than pulmonary, 79 were men, 62 were women, and 116 were children.

During the year 1899 there were in Metropolitan infirmaries and workhouses 2,669 deaths from pulmonary tuberculosis, and 263 from other tuberculous diseases.

On January 2, 1905, there were in Metropolitan workhouses and infirmaries 1,933 cases of pulmonary tuberculosis, and 260 cases of other forms of tuberculous disease. Of the former class there were 1,471 men, 421 women, and 41 children. Of the men, 530 were classed as being in the initial stages, and 941 as being advanced; of the women, 134 were initial cases and 287 advanced; of the children, 22 were initial and 19 advanced.

This return gives an expression of opinion from the medical officers of the various institutions as to "the numbers which may be considered likely to be sufficiently benefited by suitable sanatorium treatment to return with economic advantage to their employment." In their opinion, 382 men, 88 women, and 14 children would have been so benefited, or a total of 484 out of 1,933 cases—*i.e.*, 25 per cent.

During the year 1904 pulmonary tuberculosis caused 2,588 deaths, and other tuberculous diseases 260 deaths.

It will be noticed that the 1905 total is 643 in excess of that taken in 1900, and at first sight it would appear to be a considerable increase, but the 1905 census being taken in January, and that of 1900 in July, the apparent increase in numbers must be considerably discounted, as a large number of the more chronic cases take their discharge with



the advent of the warm weather. I think the seasonal variation would account for about one-half of the increase in numbers.

A further enumeration was taken in March, 1907, the figures of which are, however, not available for publication ; but Dr. Downes is able to say that the total numbers, both of "pulmonary tuberculosis" and of "other forms of tuberculosis," showed an increase over those taken in 1905.

#### **Lessons of the Census.**

The most interesting feature of these statistics is the fact that they completely bear out the opinion expressed by all Poor Law workers—viz., that the sufferers do not apply for medical assistance until the disease has made such inroads upon their health that any return to a full measure of their former capacity for work is impossible ; 25 per cent. only were considered suitable for sanatorium treatment. It is possible that the provision of adequate facilities for the treatment of early or incipient cases might induce an earlier demand for admission, but unless the community is prepared to support the dependents of a consumptive bread-winner, I see no prospect of any alteration. Frequently advice is not sought ; indeed, serious alarm is not felt until progressive emaciation and loss of muscular power compels the long-delayed application. My experience teaches me that tuberculosis is not readily transmissible from one person to another, and all the evidence we have suggests the alimentary canal as the chief gate of infection. Preventive measures appear much more hopeful than attempts at "curing," the more especially as so-called "cures" are compelled to return to the environment which produced the disease, an environment which the sanitary authorities could ameliorate if they had sufficient pluck to tackle the question of housing accommodation, and if they had the energy necessary to educate their masters.

#### **Tubercle the Pauperizer.**

The number of deaths from pulmonary tuberculosis is instructive, as by comparing the figures with the Registrar-General's returns for London, we find that 35 per cent. of the deaths from pulmonary tuberculosis occur in Poor Law institutions, an eloquent testimony to the influence of tuberculosis as an impoverisher.

#### **State Sanatoria.**

Should we be acting rightly in urging forward any large and necessarily expensive project for the sanatorium treatment of the London consumptive poor ?

In the consideration of the subject by the Metropolitan Asylums Board in the early part of 1906, the Metropolitan Poor Law officers took no part ; they foresaw the difficulties which ultimately caused

the shelving of the question. The future of the Poor Law government of London is on the knees of the gods, and it is certain that there will be no public body capable of dealing with the subject for another ten years; but apart from this, we may usefully review the situation by asking ourselves some pertinent questions:

1. Are we not dealing with the wrong end of the subject? Are not the health authorities urging us to *cure* what they should have *prevented* by the introduction of a large measure of housing reform, of factory and office ventilation, and by the teaching of hygiene and temperance in our elementary schools?

2. Are the results of sanatorium treatment such that we can recommend the enormous outlay necessary to deal with a class which would soon include all below the upper-middle stratum of society?

3. Is society prepared to sanction a measure enforcing compulsory segregation of consumptives with the consequent State support of their dependants?

4. Is our knowledge of the causation and incidence of pulmonary tuberculosis sufficient to warrant the establishment of a system which, at a great cost, will do little more than ameliorate the condition of those already afflicted? Are we justified in asserting that we know more than one or two of the ways in which phthisis is spread?

In conclusion, I beg to thank Mr. Duncombe Mann, the clerk to the Metropolitan Asylums Board, for the very kind manner in which he has placed all the information in his possession at my disposal, and also to record my appreciation of the courtesy and help so generously given by Dr. A. H. Downes.

## THE POOR LAW'S ATTITUDE TO TUBERCULOSIS.

By STANLEY B. ATKINSON,

M.A., M.B., J.P.,

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Medico-Legal Society.

THE possibilities of dealing with tuberculous patients in a Poor Law area where the population is increasing, and the institutions are being built or enlarged, are greater than in an area well within the Metropolis with an old and completed structure. The chief lines of betterment in the latter case will be attained both by education and by co-operation.

The prevalent attitude of most Poor Law administrators towards tuberculosis—and, indeed, towards most other preventable diseases—is based on a fundamental short-sighted financial fallacy. They wait until the all-but-finished product of disease appears, and thereupon, after the family and the physical constitution of the victim concerned have been ruined, strive to patch up the stricken breadwinner so that he may continue in the army of the workers whose ranks he should never have been allowed to quit. It is not a valid excuse to allege in this matter that prevention of disease is a matter solely for the Public Health Office of the municipality to cope with.

The root cause of this attitude is the shameful absence—almost absolute—of possible means of contact and co-operation between the Poor Law and the Public Health medical services; both services, be it noted, being maintained out of the same public pocket. There is an urgent and immediate need to co-ordinate the palliative “bottle of medicine” giving and the “preventive and warning” advice-giving branches of the public medical services. In this way the chiefest and cheapest methods of treatment will be enumerated and enforced.

As a matter of fact, the only compulsory co-operation between these local medical departments is extremely limited, and such as is possible is very often ignored. The following is almost a complete statement of the mutual relations:

1. In London, relieving officers must report to the Local Sanitary Authority such nuisances as they find existing during their official visits. [Public Health (London) Act, 1891.]
2. Relieving officers may call upon sanitary inspectors (inspectors of nuisances) to visit houses where infection is prevalent, for the purpose of transmitting relief.
3. The Medical Officer of Health of a district is empowered to inspect the Medical Relief Register of the District Medical Officer at the Parochial Dispensary. [Local Government Board Dispensary Order.]

These directions, in appropriate cases, might often be applied to the home treatment of consumption and other tuberculous complaints, and to the periodical or subsequent disinfection by the Local Sanitary Authority of the patient's room.

By such rational co-operation much future municipal and personal expense would be averted, and the present financial fallacy would be avoided. Further, the fact of preventability would be enforced upon the local public, and the obsession that there is a fatalism connected with the families of the tuberculous would be expelled from the minds of many who, rendered thus more hopeful, would bestir themselves to prevent the preventable. None of the methods urged here

need alarm those who resent the greater growth of State interference in matters municipal.

Medical superintendents of Poor Law infirmaries might do much by educating in turn their Guardians, the officers, and the patients under their care in the simple facts and factors of this disease. They might give occasional exhibitions, in the board-room or elsewhere, of stained tuberculous sputum; they might distribute and explain the pamphlets issued by the Public Health Office of the district; they might encourage the friends of the patient, under treatment or deceased, to seek the co-operation of the local sanitary inspector if the rooms at home should be disinfected; they might encourage the infirmary nursing-staff to take an intelligent interest in the welfare of those who visit the victims of consumption.

One recurrent difficulty met with by medical superintendents of Poor Law infirmaries is that they usually only see advanced cases of the disease, and such sufferers discharge themselves from treatment as soon as they feel able to restart work. It is a matter for economic discussion whether an action such as this is intrinsically more commendable or more condemnable. By segregating tuberculous patients in separate wards, medical superintendents will, *ipso facto*, enforce upon all concerned—Guardians, officers, patients, and their visiting friends—that a sub-infectious disease is being dealt with in treating those in the coughing and spitting stages; further general rules of cleanliness and precaution can be thus more easily enforced and supervised, and the appropriate regimen can be made systematic, especially in the matter of dieting and ventilation.

The district medical officer in our Poor Law system can aid in his office, especially by bringing sufferers into communication with the local nurses and health visitors. He can distribute and explain pamphlets, and direct towards sources of advice and help; he can keep in touch with the Medical Officer of Health, and stimulate his Medical Relief Committee to appropriate action.<sup>1</sup>

The Medical Relief Committee of the Board of Guardians may advise out-patient applicants personally. They may inquire of the Relieving Officers as to the domestic conditions of those seeking relief; they may manifest an early, firm, but kindly interest in the consumptives' welfare; they may urge the segregation of the sufferers, and compulsory disinfection of the rooms which they have been occupying; and may decline to recommend the Board to allow out-relief—in medicine, in money, or in kind—to those who are not doing their best to obey all reasonable sanitary precepts; they may recom-

<sup>1</sup> At the Central Poor Law Conference, February, 1908, a full discussion took place on "The Treatment of Tuberculosis under the Poor Law." London: P. S. King and Son. Price 1s.

mend sanatorial treatment, with the consequential adequate relief of the dependents left at home ; they may supply approved spittoons, and inquire as to their continued use. They, too, may link up the Poor Law and Public Health services, and their respective friendly or official visitors.

Finally, all concerned must be impressed, by printed and by spoken precept, with the dangers of promiscuous spitting, and, for what it may be worth, it must be enforced on young—in Scattered Homes or elsewhere—and old—in recreation yards or elsewhere—that “If you expect to rate as a gentleman, you must expectorate as a gentleman.”

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## TUBERCULOSIS AND THE POSTAL SERVICE.

By T. D. LISTER,

M.D., M.R.C.P.,

Physician to Mount Vernon Hospital for Consumption ; Hon. Advisory Physician to the National Association for the Establishment and Maintenance of Sanatoria for Workers ;

AND

CHAS. H. GARLAND,

Chairman of the Association and Secretary of the Postal Branch of the Association.

In considering the incidence of a disease dependent upon known conditions of infection, social welfare, and “diathesis,” as it falls upon any public service, one has to remember first of all that the lives are medically selected. The inference that naturally arises is that, as compared with the whole population, the incidence of the disease should be small<sup>1</sup>—that is, presuming that the employment of the various branches of the British Postal Service taken together are comparable with the employment of the general community. It is, therefore, a matter for inquiry if a doubt exists that, so far from such incidence being less than that of the selected class, it is at least as great. Still more pressing would be the need for investigation if a suspicion arose that the incidence was actually greater.

<sup>1</sup> In the Forty-first Report, 1895, the Postmaster-General says : “The Post Office staff consists of selected lives, candidates being required to pass a medical examination before they are admitted to the public service” ; and in the Forty-second Report the following words occur : “In the Post Office there ought to be a smaller number of deaths per 1,000 than would be found in a similar number of persons engaged in somewhat similar occupations elsewhere.”

**Frequency of Tuberculosis among British Postal Servants.**

So far as the available evidence goes in regard to the Post Office Service and tuberculosis, there is nothing to show that the incidence is less than that among the general population. Various attempts have been made, with the weight of official resistance to inquiry to overcome, to make out a case for the assertion that Post Office employes suffered excessively from tuberculosis. Without entering into the elaborate details of a controversy that is now almost out of date, and was certainly not satisfactorily cleared up by official figures, it is interesting to note, firstly, that certain Postal Office insurance statistics show that 45·4 per cent. of the deaths occurred from tubercle; secondly, that for ten years (1896 to 1905) the loss per 1,000 (deaths and retirements together) was 1·8 in the Post Office, as compared with 1·3 deaths per 1,000 of the general population; and, thirdly, that a somewhat partial investigation by the British Postal Medical Officers' Association, dealing with about 15 per cent. of the Service, and printed in 1901, shows 1·2 per 1,000 at least. Without laying undue stress upon these figures, owing to the age constitution of the Postal Service, excluding very young lives (under fifteen) and very old lives (over sixty), yet it is safe to conclude that the incidence is certainly not appreciably lower, and may be appreciably higher, in the Postal Service than in the general population. For the incidence of phthisis, as ascertained by investigation of the Registrar-General's returns,<sup>1</sup> among all occupied males, and among selected employments (*e.g.*, agriculturists, clerks, shopkeepers, warehousemen, the alcohol trade, etc.), shows always the same characteristics—viz., an almost constant incidence at all ages of employment, slightly higher during the most active periods of life, and, of course, varying in its amount in various occupations. It is, on the whole, fair to compare the Postal Service with the general population, owing to the number of industries comprised in the Service.

Granting that this be so, and that we can accept the statement that Postal Service conditions do not protect the worker from tubercle, we are tempted to ask why the natural inference that medical selection and State service should protect is not borne out by the facts.

Various grades of the Service seem to suffer differently, as might be expected,<sup>2</sup> and even among the outdoor workers—the letter-carriers or “postmen”—there is a considerable amount of phthisis, though it is

<sup>1</sup> See also Lister, T. D.: “A Graphic Expression of Extra Risk,” *Transactions of Life Assurance Medical Officers' Association*, 1902; also “Phthisis in Relation to Life Assurance,” *Practitioner*, 1903.

<sup>2</sup> The Postmaster-General's Forty-first Report says: “The Post Office population is distributed unequally among different ages and between both sexes, excluding the very young and very old. It consists of selected lives, candidates being required to pass a medical examination before they are admitted to the public service, and the nature of the work varies from duties of a light and pleasant character to some which involve strain, exposure, and break of rest.”

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probably much smaller in proportion to the number employed than among the indoor workers.

Among the cases as yet admitted to the Benenden Sanatorium through the Post Office Sanatorium Society (a large branch of the National Association for the Establishment and Maintenance of Sanatoria for Workers) the following grades have been represented: Postmen, 33; sorting-clerks and telegraphists (provincial), 22; counter-clerks and telegraphists (metropolitan), 2; sorters (metropolitan), 14; telegraphists (metropolitan), 14; clerks, 4; postmaster, 1; lift attendant, 1; sorter tracers, 2; assistant superintendent telegraphs, 1; assistant inspector messengers, 1; porters, 2; overseer, 1; total, 98. Patients in occupations mainly outdoor, 33; patients in occupations mainly indoor, 65.

The Postal Office Medical Officers' Association's Report, quoted above, shows also the following grades as being affected by tubercle (chiefly phthisis), so far as that investigation went—viz.: Town postmen, 37; rural postmen, 2; sorting clerks and telegraphists, 27; telegraphists, 11; learners (probationers), 2; clerk, 1; superintendents, 2; wireman, 1; rank not stated, 2; total, 85. Occupations mainly outdoor, 40; occupations mainly indoor, 45.

The relative numbers of the various grades that have joined the Post Office Sanatorium Society (34,500) are not exactly known, and would be with difficulty ascertained. Nor does the Report of the Postal Office Medical Officers' Association show the proportion of postmen to the total number investigated. It is, therefore, impossible to estimate the incidence on any particular class.

The explanation of the somewhat high number of cases among those engaged in the, at first sight, healthy outdoor work of collecting and delivering letters is probably the low scale of pay. Mr. John Burns, in speaking of phthisis as a social disease, said it depended on poverty and drink. It was suggested that ignorance of hygiene formed the third leg of the tripod, and he assented.

### **Ætiological Factors.**

In considering, then, these factors in relation to the Postal Service, it can safely be said that drink, as one of the important causes tending to maintain at least an average phthisical mortality, can be excluded. Extreme poverty also does not exist, and in regard to the considerable incidence on those engaged in the very healthy but lowly paid outdoor work, exposure under all atmospheric conditions at all hours of the day and night must be taken into account, as well as the necessity of living near the sorting offices, which are compulsorily not placed in the most open districts in our towns. Ignorance, of course, plays its part and will continue to do so, as it does among all classes of society and in all



grades of employment, whether public or not. Much is now being attempted by the Postal Branch of the Workers' National Sanatorium Association, with the assent of the Postmaster-General, to dispel this ignorance, and notices prohibiting spitting have been posted up by the Department since 1901. But that much remains to be done may be evidenced by the fact that certain Tobin's tubes placed in one office (which discharge fresh air into the office, and make marks on the wall from the dust current produced just above the mouths of the tubes) are blocked up by the employés themselves, under the impression that they are flues. Another fact is that many of those engaged on night work, often beginning in the very early hours, do an arduous duty without taking any proper food even of the simplest kind. But such instances are only typical of the prevalent industrial ignorance which renders so many hygienic efforts nugatory. The apparent maintenance of the incidence of tuberculosis in the Postal Service at about the same, or at a higher level, than in the general population, depends therefore, on some other factor or factors than drink, poverty, or ignorance. The questions that arise are two—(1) Is the medical selection of lives for the Postal Service sufficiently safeguarded? (2) Is the State an equally "model employer" in regard to sanitary precautions in this as in other services?

#### **Medical Selection of Staff.**

In regard to the first question—the nature of the medical selection—it is noteworthy, from the evidence given before the Hobhouse Committee, that there is apparently no standard in existence, and the following quotation is a significant commentary on the "selection" which should exist: "In practice I find that the standard of the medical examination is not high, for the Post Office employs persons of immature physique . . . the decision as to the primary fitness of a candidate for the Post Office Service does not rest, unfortunately, with the Postmaster-General" (Dr. A. H. Wilson, Chief Medical Officer of the Post Office, 1904).

#### **Sanitary Precautions.**

In regard to the second question, the sanitary precautions adopted in the various indoor departments, we may remark that certain recommendations made by the British Postal Medical Officers' Association in 1901, such as that "no officer should be employed indoors suffering from any discharge or sputum which has been found to contain tubercle bacilli; that ventilation should be under expert control, and not in the hands of ordinary members of the staff; that spittoons, containing a 2 per cent. solution of sulphate of copper, be provided; and that the staff dwellings should be supervised and advice given," have not yet, so

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far as we can learn, been adopted, either actually or in any improved or similar form.

Certain recommendations of the "Hobhouse Committee" of 1907 may also be quoted in this connection: "Personal observation has led your Committee to the conclusion that many, even of the large offices, are not cleaned or painted as often or as well as the best conducted private places of business. Lime-washing and dusting, particularly in bag rooms, should be more frequently done, and greater attention should be paid to the sanitary requirements of the staff. A higher general standard of cleanliness should be insisted upon, especially in some of the older offices, the conditions of which are not justifiable, even when all the difficulties and cost of obtaining suitable premises are considered" (pp. 5-6, Sec. 48).

### General Conclusions and Recommendations.

Finally, though no system of selection can prevent consumption altogether, there would seem to be, on the one hand, a need for insistence on a defined and reasonably high standard of selection of lives for a responsible public service carrying with it the advantages of permanent State employment; and, on the other hand, and more particularly, a need for the more systematic inspection, cleansing, disinfection, lighting, and ventilation of the structures, a more rigid discipline in regard to observance of the existing sanitary regulations of the Postal Service, and a necessity for considerable improvement in them.<sup>1</sup>

<sup>1</sup> To those desirous of fully investigating the question of Tuberculosis and the Postal Service the following references may prove of assistance:

"Rapport sur la tuberculose dans le service postal de France," par M. le Dr. Mignot (publication officielle, 1900).

"The Post Office and the Prevention of Tuberculosis," by C. H. Garland, *Lancet*, September 14, 1901.

"Lighting, Ventilation, and Aggregation in Relation to the Prevention of Tuberculosis," by C. H. Garland, *Transactions of British Congress on Tuberculosis*, vol. ii., pp. 113, 114, 1905.

"La Tuberculose dans l'Administration Britannique des postes," par Chas. H. Garland, *Transactions of Congrès Internationale de la Tuberculose*, Paris, p. 815 et seq., 1905 (Tables given of loss from tuberculosis).

"Report of the Association of British Postal Medical Officers on the Prevalence of Tubercle amongst the Employees of the Post Office during the Year ending December 31, 1900"; and Editorial Article on above Report in *Civil Service Magazine*, January, 1902.

"Secretary's Report to First Annual Conference of Post Office Sanatorium Society, September 28, 1907," London; and Introduction to "Rule Book" of above Society, September, 1906.

"Annual Reports of Postmaster-General," vols. 1896-1907, London.

"Report of Committee on Post Office Wages" ("Bradford Committee"), 1905.

"Report of Parliamentary Committee on Post Office Servants" ("Hobhouse Committee"), 1907.

"Report of Interdepartmental Commission on Post Office Establishments" ("Tweedmouth Commission"), 1897.

## ORIGINAL PAPERS.

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### TUBERCULOSIS OF THE FEMALE REPRODUCTIVE ORGANS.

By A. ERNEST MAYLARD,

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THE awakened interest within the last few years in the general subject of tuberculosis has led to a closer investigation into the possible seats of primary infection in every part of the body; and although the pulmonary phase of the disease still somewhat overshadows all other considerations, there is, nevertheless, no doubt of the increasing importance which is coming to be attached to the appearance of the affection in other viscera. And the reason for this is to be found not only from the possible influence or bearing which disease so located may have upon the lungs, but from the mischief arising out of the directly affected part itself. It is this latter connection that has come to play such a prominent and frequently puzzling part in the rôle of abdominal surgery; and while intestinal complications occupy the premier position in abdominal tuberculosis, there is now no question of the important part played by tuberculosis of the reproductive organs.

I cannot do more than touch upon, in the briefest possible way, some of the points of most cogent interest in connection with the subject which forms the title of my paper. And I shall limit my remarks to the three following considerations: (1) Primary infection of the female reproductive organs; (2) the nature of the lesion produced; and (3) treatment.

#### **Primary Tuberculous Infection of the Female Reproductive Organs.**

Since the question has been raised, evidences have been forthcoming with gradually increasing frequency to show that both within the clinical experience of the practitioner and as a result of the post-mortem and post-operative investigations of the pathologist, the uterus and Fallopian tubes—more particularly the latter—may present foci of infection which, in the absence of any other lesions in the

body, may reasonably be regarded as primary. Among a few recorded examples, the following may be given: Hanschka<sup>1</sup> records the case of a woman aged twenty-nine years in whom the whole endometrium was infiltrated with tubercle, and traces of the disease existed in the mucosa of the tubes. There was no evidence of tuberculosis in any other part of the body. Nebesky's<sup>2</sup> case was that of a woman aged thirty-three years in whom the only discoverable disease—which was removed by operation, and ended in complete recovery—was advanced tuberculosis in the cervical canal, less in the

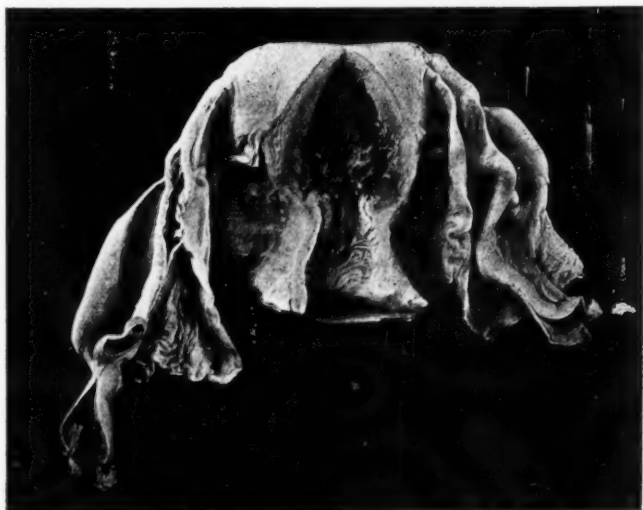


FIG. I.—TUBERCULOSIS OF THE UTERUS AND FALLOPIAN TUBES.

The uterine cavity contains caseous material, and the tuberculous ulceration of the mucosa has extended into the subjacent muscular tissue. (Photograph of a specimen in the Museum of St. Thomas's Hospital, London.)

endometrium, and still less in the tubes. Young's<sup>3</sup> case was that of a woman aged twenty-six years; the disease was exclusively limited to the cervix. Peham's<sup>4</sup> patient was thirty years of age, and the only disease detected was a tubercular ulcer on the cervix. Lea<sup>5</sup> records two instances in both of which the disease was limited to the tubes.

<sup>1</sup> Hanschka: *Centralbl. f. Gyn.*, No. 5, 1901.

<sup>2</sup> Nebesky: *Monats. f. Geb. u. Gyn.*, November, 1905.

<sup>3</sup> Young, Eric: *Trans. Obstet. Soc.*, vol. xlviii., p. 286. London, 1907.

<sup>4</sup> Peham: *Centralbl. f. Gyn.*, No. 7, 1908.

<sup>5</sup> Lea, Arnold W. W.: *Trans. Obstet. Soc.*, vol. xlv., p. 133. London, 1904.

Other cases have been published by Penrose and Beyea,<sup>1</sup> Deletrez,<sup>2</sup> Fabricius,<sup>3</sup> Macnaughton-Jones,<sup>4</sup> etc.

Apart, however, from the actual record of cases, it seems a perfectly reasonable view to entertain that infection should enter the system by way of these organs as readily as by any others, provided it can be shown that conditions exist which are known elsewhere to favour the lodgment of the bacilli. As far as so-called surgical tuberculosis is concerned, we know that the only factor required to allow of infection by the bacillus is some impairment of the normal functional activity of the tissue. A slight injury of any kind is sufficient; and probably in the case of the respiratory organs and the alimentary canal it is usually the previous existence of a chronic or subacute catarrh that proves the predisposing cause in the commencement of the disease. So, therefore, with the mucous lining of the uterus and tubes. What more reasonable to suppose than that impairment of the tissue, either by inflammation or traumatism, should equally dispose to an infection by the bacillus, supposing it to be brought into relation with the damaged parts either by direct introduction *per vaginam* or indirectly through the blood? The case recorded by Fabricius<sup>5</sup> seems a very apt illustration of the contentions here raised. The patient introduced a hair-pin into the rectum; it perforated the vagina and penetrated the vaginal portion of the cervix. At the point of impaction of the latter, a typical tubercular ulcer developed.

The comparative rarity of the disease as a primary source of infection in the tubes or in the uterus, as, at least, suggested by recorded examples and the adverse criticisms of some authorities, should, I venture to think, not make us any the less alive to the possibility of its more frequent occurrence. After all, it is not necessarily the grossness of the lesion itself in the organ primarily infected which may prove of the greatest moment; it is the possibility that without the production of any such grave lesion the impaired vitality of a part may be the means of admitting the entrance of the bacillus into the system only to cause more serious results in other parts. It is from some such consideration as this, and from the fact that we are striving to prevent infection of the system either by the lungs or the alimentary canal, that we should not regard lightly the existence of simple inflammatory conditions involving the genital tract. The possibility, therefore, of the reproductory organs being a means by which the bacillus may obtain a first footing emphasizes still more the need for

<sup>1</sup> Penrose and Beyea: *Amer. Journ. Med. Sciences*, vol. cviii., p. 521: and vol. cix., p. 271. 1894.

<sup>2</sup> Deletrez: *Ann. Gyn. et. Obstet.*, January, 1908.

<sup>3</sup> Fabricius: *Centralbl. f. Gyn.*, No. 7, 1908.

<sup>4</sup> Macnaughton-Jones: *Lancet*, vol. i., p. 1275, 1908.

<sup>5</sup> Fabricius: *Centralbl. f. Gyn.*, No. 7, 1908.

enforcing those precautionary measures which are now being taken with the object of stamping out the disease, be it bovine or human in origin.

#### **The Nature of the Tuberculous Lesion.**

It is not that tuberculous lesions of the genital tract present in themselves any histological features which differ from infection elsewhere, but rather that the parts involved produce a train of derangements dependent solely upon the anatomical structures and physiological functions peculiar to the regions. The most striking contrast between the reproductive system and either the respiratory or the alimentary lies in the comparative immobility and functional inactivity of the former. Thus, when once the bacillus obtains a lodgment in the cervical canal, in the uterine cavity, or in the lining wall of the



FIG. 2.—TUBERCULOUS DISEASE OF THE FALLOPIAN TUBE.

The outer segment of one tube has been sectioned to expose canal filled with caseous matter. (From a photograph of a specimen in the Museum of the London Hospital.)

Fallopian tube, there is little to disturb the quiet progress of the disease. Except at the periods of menstruation and during parturition, there cannot be said to exist in the parts themselves anything to check the onward advance of the invading bacillus beyond the exercise of such natural forces as the tissues themselves, or the system as a whole, can afford.

The pathological changes, therefore, which may be met with in some part of the genital tract are often of the most advanced character. In the two illustrations given, the one of the uterus and the other of the Fallopian tube, it will be seen how gross may be the lesions when the disease has been allowed to run an almost uninterrupted course. In the case of the uterus (see Fig. 1) the whole lining wall of the viscus has been converted into a condition of ulceration and caseation, the disease also having extended into the muscle wall. In the case of the Fallopian tube (see Fig. 2), the

canal is seen to be filled with caseating material, which has not only effectually blocked the channel, but greatly enlarged the entire organ. These illustrations, however, are more or less extreme examples. Every phase in the development of the disease may be met with, from the mere sprinkling of a few miliary tubercles in the mucous membrane of any part of the tract to the conversion of even the uterus as well as the tubes into what become practically little more than large tubercular abscesses. Targett<sup>1</sup> has described one of these advanced conditions of tuberculous pyometra, where the entire uterus was converted into a kind of sac containing purulent caseous débris. And in the Royal College of Surgeons there is a specimen of tuberculous salpingitis in which both tubes present the appearances of abscess cavities (see Fig. 3).

The particular pathological features which have led to so much interest in recent years, especially from the aspect of treatment, are not so much, perhaps, the essentially local and isolated lesions of the genital tract as the changes which are affected in the surrounding tissues and organs.

The freedom with which the abdomen is now opened for purposes of exploration as well as for some form of specific treatment has frequently caused the surgeon to encounter pelvic conditions dependent upon tubercular disease of the reproductive organs. It, therefore, behoves him to be as cognizant of the lesions affecting those viscera as he is expected to, and should be, of diseases implicating other organs within the abdominal cavity.

As soon as the inflammatory changes connected with the tubercular process in the uterus or Fallopian tubes—the ovaries, from the comparative rarity of their infection, being left out of consideration—reach their respective peritoneal linings, adhesions are contracted both between the viscera themselves and between them and the serous tunics of the intestines, the bladder, and the abdominal parietes. There is no limit to the extent to which this matting may go; and the explanation is probably to be found in the special anatomical disposition of the parts, already referred to, whereby their immobility allows of the undisturbed union of the applied parts. The results are: Considerable displacement of the viscera; their complete functional disorganization; and very possibly other disturbances connected with the bladder and intestines. It is quite remarkable how, in some of these cases, the entire pelvis seems to be filled by a matted mass, in which dilated and tortuous tubes encircle and conceal the ovaries, and the uterus becomes embedded in an indistinguishable and inseparable mass of adventitious tissue. It is quite possible, and indeed probable, that some of these gross intra-pelvic conditions owe

<sup>1</sup> Targett, Jas. H.: *Brit. Med. Journ.*, vol. ii., p. 959. 1903.



their origin to an advance of the disease from above; and that the infection of the reproductive organs is the consequence rather than the cause of the generalization. Be this as it may, it constitutes a pathological condition which produces frequently one of the most trying and difficult complications that the abdominal surgeon may encounter.

**Treatment of Tuberculous Affections of the Female Genital Organs.**

If tuberculosis could be regarded as a malignant disease in the same way as we look upon carcinoma, there would be no difficulty in the question of treatment; a clean and free sweep away of the



FIG. 3.—TUBERCULOUS SALPINGITIS.

Both Fallopian tubes have been converted into abscess-like cavities. (Photographed from a specimen in the Museum of the Royal College of Surgeons of England.)

whole involved organs would be the line to pursue. But tuberculosis, by comparison with carcinoma, differs in one most vital particular, and that, that the human system possesses within itself, independently of any external agency, the power to overcome the disease, and to restore a part to its normal condition. In other words, we are compelled to regard the affection, whatever be the organ or tissue involved, as a conflict between two forces, in which one or the other must conquer. At first the invaders, represented by the tubercle bacilli, are the successful aggressors, and the tissues of the human system are acting solely in self-defence. If ultimate success is to rest with the latter,

then the tables must be turned, and the system take action in the offensive, and overcome and destroy the invaders. It is probable, from what we know regarding the stages of quiescence and the occasional recrudescence of the disease at subsequent periods, that complete destruction is by no means constant—that what is effected is merely a check to further extension; nevertheless, such inhibition may often prove permanent.

The above remarks upon the general subject of tuberculosis are not without their bearing upon the disease as met with in the reproductive organs. We have abundant evidence to show that even the most advanced involvement of these viscera may be overcome by the natural resistant forces of the system. But this possibility must not lead us into the erroneous belief that such a happy sequence of events will be followed in all cases. We have constantly to bear in mind that all the time we are adopting purely expectant lines of treatment we are running the grave risk of allowing the disease to advance. As long as the disease is active, the patient is never free from the possible manifestation of other phases connected with the infection—more serious, it may be, than that for which the conservative treatment is being employed. Thus, then, we are reduced to the position that so soon as we are satisfied that our local and constitutional efforts fail to produce any marked improvement either in the affected parts themselves or in the general systemic condition of the patient, something operative must be attempted. Curettage may be dismissed with no further remarks than that it is a means to be employed for diagnostic purposes, and in no sense as a method of treatment. If the cervix exhibits limited ulceration, it may be excised; but if the body or lining membrane of the viscus is involved there is the probability that the Fallopian tubes are likewise implicated; and that, therefore, nothing short of a total extirpation of the parts is called for.

Much discussion has taken place over the line action to pursue in cases of tubercular salpingitis. Should the tubes alone be excised, or should the uterus be removed in conjunction with them? There are cases where undoubtedly the disease appears in the tube towards its fimbriated extremity as an apparently limited and localized lesion. In such cases the simple removal of the tube may be quite sufficient. In cases, however, where the disease is more extensive and occupies a considerable length of the tube, it is very probable that there is infection of the uterus also. Hence modern practice is in favour of making a clean sweep of all the reproductive organs.

Lastly, we have those cases—but too frequent when the tubes are extensively involved—where the excessive formation of adhesions has matted the parts together and to the surrounding parts in such a way and to such a degree that differentiation of the separate

viscera becomes impossible. Anyone who has encountered conditions of this kind knows something of the difficulties to be faced in attempting to remove the disease. But should the attempt be made? It is not the difficulties which the surgeon fears to tackle, and can overcome with success, but the grave shock to the patient which supervenes, and which may of itself prove fatal. It is the possibility, and indeed probability, that our best efforts may be frustrated by fatal after-effects that should make us pause. There is this consideration also, that, in some inexplicable way, the exposure, and possibly the manipulation of the parts, involved in a simple exploratory laparotomy, causes the disease in some of these advanced cases to subside, and even disappear. For this additional reason, therefore, we should hesitate before submitting our patient to the extremely grave risks associated with the attempts to remove parts that are practically inseparably attached to each other and to the surrounding structures.

## AMYL NITRITE AND THE TREATMENT OF HÆMOPTYSIS IN PULMONARY TUBERCULOSIS.

By GEORGE A. CRACE-CALVERT,

M.B., L.R.C.P., M.R.C.S.

Physician to the Vale of Clwyd Sanatorium, Ruthin, North Wales.

In the first number of this Journal Dr. Francis Hare discussed the treatment of hæmoptysis by amyl nitrite, to which he first drew attention in 1903.<sup>1</sup> He gives the literature of the subject up to that time, and he concludes that it is by far the best drug to administer for that condition. Since that article was published others have described their experience in the use of the drug, some fully confirming his results and deductions, whilst others have not had such a fortunate experience.

Cattle,<sup>2</sup> in discussing the treatment of hæmoptysis, considers that inhalations of nitrite of amyl are a more rational plan of treatment than the administration of adrenalin, etc., because the systemic vessels are of much greater extent than the pulmonary ones, and hence any general dilatation of the arterioles will be accompanied by diversion of the blood from the pulmonary circulation, and, consequently, there will be

<sup>1</sup> Hare, Francis: "Treatment of Hæmoptysis by Nitrite of Amyl." See also *Australasian Medical Gazette*, October, 1903.

<sup>2</sup> Cattle, C. H.: "The Treatment of Hæmoptysis," *British Medical Journal*, January 14, 1905.

a reduction of the pressure there. Hyslop Thomson<sup>1</sup> tried it in one case, but the inhalation was followed by coughing and increased flow of blood, though he is inclined to think that this may have been purely accidental. Branch<sup>2</sup> describes a case of profuse hæmoptysis where numerous *spirochaetes* were found in the sputum. He tried ergot, hazeline, adrenalin, and amyl nitrite, but the last named seemed to have the best effect in checking the bleeding. Herapath Wood<sup>3</sup> uses nitrite of amyl in cases of profuse hæmoptysis as the first procedure, and if the patient survives the first few minutes, he sometimes gives a hypodermic of morphia to check coughing and to allay excitement. In ordinary cases he uses liq. trinitrini (1 min.) every two hours to lower the blood-pressure. Brown,<sup>4</sup> in discussing the treatment of hæmoptysis by nitrites, considers that it is dangerous both to lower the blood-pressure too much as well as not to lower it sufficiently, so he takes the pressure every two hours, and attempts to keep it between 100 and 115 or 120 millimetres of mercury. He regulates his treatment according to the pressure, and says that amyl nitrite acts instantaneously, but the effect only lasts about five minutes, while nitroglycerine—as compared with sodium nitrite—acts more quickly and more intensely, but for a slightly shorter period. In a case of repeated daily hæmoptysis, where the quantity of blood brought up averaged nearly a pint per diem during eight days, Downes<sup>5</sup> tried frequent inhalations of 3-minim capsules of amyl nitrite, but they appeared to have no effect, though the application of an icebag to the chest-wall over the diseased area caused the bleeding to cease.

In a paper on the subject early in 1907<sup>6</sup> I discussed the treatment of hæmoptysis, and gave my (very favourable) experience of the action of the nitrite in about twenty-two attacks; whilst I also considered the action of the drugs usually employed for this condition.

In a lecture on "Some Medical Hæmorrhages," Leonard Williams<sup>7</sup> expressed some very decided views on the subject. He stated that the only consequence of causing the inhalation of amyl nitrite is to induce a "widespread dilatation of the systemic vessels, with a considerable and rapid fall of arterial pressure," "but no necessary or even

<sup>1</sup> Thomson, H.: "The Treatment of Hæmoptysis," *British Medical Journal*, March 25, 1905.

<sup>2</sup> Branch, C. W.: "A Case of Hæmoptysis," *British Medical Journal*, December 1, 1906.

<sup>3</sup> Wood, W. B. H.: "The Treatment of Consumption," *Liverpool Medico-Chirurgical Journal*, vol. xxvii., p. 66.

<sup>4</sup> Brown: "The Treatment of Hæmoptysis by the Nitrites," *American Journal of the Medical Sciences*, August, 1906.

<sup>5</sup> Downes, Harold: "Severe Hæmoptysis Treated by Means of the Icebag," *British Medical Journal*, June 29, 1907.

<sup>6</sup> Crace-Calvert, G. A.: "Amyl Nitrite in Hæmoptysis," *Lancet*, April 6, 1907.

<sup>7</sup> Williams, Leonard: "Some Medical Hæmorrhages," *The Hospital*, December 14, 1907.

probable consequential effect on the vessels in the pulmonary system." Hæmoptysis may be due to the rupture of a vessel in either the pulmonic or systemic system; and if the ruptured vessel be in the pulmonic system—*e.g.*, as in mitral stenosis—he says that amyl nitrite will certainly do no good. He also thinks that there is risk in giving it in tuberculosis generally, as the mean arterial pressure is low.

Now, physiologically I believe that he is wrong, as (1) Schäfer<sup>1</sup> has shown that it is impossible to cause a widespread dilatation of the systemic vessels without at the same time reducing the pressure in the pulmonary vascular system; and (2) in the experiments of Pic and Petitjean<sup>2</sup> on curarized dogs it was found that the injection of 1 c.c. of nitrite of amyl into the femoral vein caused in two or three seconds white patches to form on the surface of the lung. These patches steadily extended and coalesced, so that finally in two or three minutes the lung parenchyma became bloodless, and could be snipped with scissors without bleeding. This effect lasted several minutes. Now, wounds of the lung are usually followed by profuse hæmorrhage, so that such an extensive anæmia of the lung could not have been brought about by an action on the bronchial arteries alone, and must have been caused by an action on the pulmonary vessels as well.

Clinical records, too, are against Williams, for in almost every one of over 170 published cases inhalations of amyl nitrite have produced immediate cessation of the bleeding, and some at least of these cases must have been due to the rupture of a pulmonic vessel; and, indeed, one of the first cases published by Hare<sup>3</sup> was that of hæmoptysis due to mitral insufficiency, where the bleeding had usually lasted for two to four days in previous attacks, and on this occasion was instantly checked by inhalation of one capsule of amyl nitrite. Again, in cases of profuse hæmoptysis, when the patient coughs up large quantities of blood in a few seconds, the bleeding can scarcely be from a bronchial vessel, but must come from a ruptured pulmonary vessel. In cases of this kind I have used the drug with excellent effect, as the following brief notes will show. The patient had advanced tuberculous mischief in both lungs, and had had many hæmorrhages at various times. On March 1 he had a small, sharp attack, which was followed during the next few days by several small attacks, all of which yielded promptly to inhalations of the nitrite. On May 8 he had another sharp hæmorrhage, which stopped at once after an inhalation, though he continued to bring up bright-coloured sputum for a couple of days, apparently from a recently formed cavity. On May 17 he brought

<sup>1</sup> Schäfer: "Text-book of Physiology," vol. ii., p. 150. 1900.

<sup>2</sup> Pic and Petitjean: "Comptes Rendus Hebdomadaires des Séances de la Société de Biologie." Quoted by Dr. Hare, *Lancet*, November 24, 1906, p. 1436.

<sup>3</sup> Hare, Francis: "The Medical Treatment of Deep-seated Hæmorrhage" *Lancet*, August 20, 1904.

up  $\frac{3}{4}$  pint of blood, and the attack ceased when he had inhaled 6 minims of the drug and had been given a hypodermic of morphia ( $\frac{1}{4}$  grain). Next day, at 5 p.m., he brought up two or three mouthfuls of bright blood, and inhaled 3 minims of the drug. On May 19 he started a profuse hæmorrhage, and at once inhaled the contents of a 3-minim capsule, and was given another by the nurse. When I arrived a minute or two later he appeared to be dying, though the bleeding had ceased. His heart was beating irregularly and feebly, and his pulse was scarcely perceptible. I gave him a hypodermic injection of morphia, and he revived and vomited a quantity of blood which, with what he had coughed up, came to 2 pints. There was no further hæmorrhage, but he died ten days later from exhaustion. I am convinced that the nitrite saved him from immediate death on several occasions. So that I do not think that Dr. Williams has made out a good case against the use of amyl nitrite, though his opinion was based on two cases of hæmoptysis<sup>1</sup> due to tuberculosis, in both of which the exhibition of the nitrite was immediately followed by death; but it is only fair to add that one of the patients certainly, and the other possibly, would very shortly have died in any circumstances.

In criticizing the above statements of Leonard Williams, Reissmann<sup>2</sup> states that during the past three years he has treated at least ninety cases of hæmoptysis resulting from pulmonary tuberculosis by the immediate administration of amyl nitrite, and that, with few exceptions, the remedy was promptly effective. He has not known it to do any harm, and it certainly did not cause the death of any of his patients, whilst he has found it safer than morphia, to the use of which drug he ascribed the fatal result in two cases of hæmoptysis. Lundie<sup>3</sup> has treated one case of profuse pulmonary hæmorrhage by the free administration of amyl nitrite on a towel, like chloroform, without any regard to the official dosage. He states that "the results were good, and a satisfactory recovery followed."

At a recent discussion before the Liverpool Medical Institution on a paper<sup>4</sup> that I read on this subject most of the speakers agreed that the drug was of use in treating hæmoptysis, though many used it in conjunction with morphia. Sir James Barr spoke of the importance of avoiding any increase of blood-pressure in pulmonary tuberculosis, and had used the nitrites for cases of hæmoptysis. Nathan Raw did not agree that the drug had any specific action in the control of

<sup>1</sup> Williams, Leonard: "Amyl Nitrite in Hæmoptysis," *Lancet*, January 18, 1908.

<sup>2</sup> Reissmann, C. H.: "Amyl Nitrite in Hæmoptysis," *Lancet*, January 11, 1908, p. 130.

<sup>3</sup> Lundie, A.: "The Free Use of Amyl Nitrite in Pulmonary Hæmorrhage," *Lancet*, February 8, 1908.

<sup>4</sup> Crace-Calvert, G. A.: "The Treatment of Hæmoptysis by Nitrite of Amyl," *Liverpool Medico-Chirurgical Journal*, July, 1908. Summary in *Lancet*, February 22, 1908.

hæmoptysis, though he thought that by lowering the blood-pressure it might occasionally be useful. However, in a recent article on "The Modern Treatment of Tuberculosis by Drugs,"<sup>1</sup> he states that he has "had good results from the inhalation of nitrite of amyl." Buchanan pointed out that Nature's method of treatment in these cases was a lowering of the pressure, and therefore the use of the nitrite was a rational therapeutic measure, and the results justified its administration.

Philip<sup>2</sup> thinks that the blood-pressure should be gauged in order to determine the line of treatment, only using nitrite of amyl if the pressure be comparatively high; but, as Sir James Barr<sup>3</sup> has pointed out, "blood-pressure is a purely relative term, and what might be considered a relatively high blood-pressure in pulmonary tuberculosis would be a low pressure in renal disease." Philip further thinks that "the routine treatment of hæmoptysis by amyl nitrite is to be deprecated."

In conclusion, the points in favour of amyl nitrite may be summed up as follows:

1. It acts instantly, producing an immediate fall in blood-pressure at the bleeding-point, thus giving time for clotting to take place, whilst the bleeding usually ceases at once.
2. It apparently produces an intense anæmia of the lung parenchyma, without any reactionary hyperæmia such as follows the use of adrenalin.<sup>4</sup>
3. It does not interfere with coughing, and so enables the patient to get rid of the effused blood as soon as possible, which might otherwise diminish the already impaired respiratory capacity, or lead to septic pneumonia or a rapid extension of the tuberculous mischief.
4. Capsules can easily be carried by the patient, who can then inhale the contents of one as soon as ever the hæmoptysis begins, thus treating the case at once, and so often preventing a worse attack. I usually give patients who have had one attack a capsule or two to carry about with them, as I consider it to be the most efficient drug in the treatment of such cases, and by far the best one to administer first.

<sup>1</sup> Raw, Nathan: "The Modern Treatment of Tuberculosis by Drugs," *Folia Therapeutica*, January, 1908.

<sup>2</sup> Philip, R. W.: "Pulmonary Tuberculosis," "Medical Annual," 1908, p. 588.

<sup>3</sup> Barr, Sir James: Discussion on "The Treatment of Hæmoptysis by Nitrite of Amyl," *Lancet*, February 22, 1908, p. 565.

<sup>4</sup> Crace-Calvert, G. A.: "Amyl Nitrite in Hæmoptysis," *Lancet*, April 6, 1907, p. 940. Hare, Francis: "Hæmoptysis and Nitrite of Amyl," *The Hospital*, December 28, 1907, p. 354.



## A CONTRIBUTION TO THE ÆTIOLOGICAL TREATMENT OF TUBERCULOSIS.

By TAAV. LAITINEN,

M.D.,

Professor of Hygiene and Director of the Hygienic Institute at the University of  
Helsingfors, Finland.

THE classical investigations of Edward Jenner in the prevention of small-pox led the way to successful treatment of other infectious diseases. Marked advance has been made during the last fifteen years. It is natural that much attention should have been given to the prophylaxis and treatment of so widespread and dangerous a disease as tuberculosis. The first experiments in this direction were made by the distinguished discoverer of the tubercle bacilli, Robert Koch, as far back as 1890. At the Tenth International Medical Congress in Berlin, in the above-mentioned year, Koch announced that after long researches he had found a substance which, not only in the laboratory, but also within the tissues of the living organism, hindered the growth of the tubercle bacillus. After this announcement many investigators followed in the footsteps of Koch. Eager search has been made for some satisfactory means whereby active as well as passive immunity might be procured.

It is unnecessary to refer in detail to the numerous experiments dealing with this subject. I will only briefly mention that Koch, after the introduction of his old tuberculin, has brought forward a new tuberculin (T.R.). The first contrives to be used mainly for diagnostic purposes, while the second is chiefly employed as a curative agent. I myself have used Koch's new tuberculin in eighty-seven different cases.

Koch has prepared his tuberculin from the organisms of human tuberculosis; Roux has made a tuberculin from the bacilli of avian tuberculosis; and Ramont and Ravant have introduced a so-called fish-tuberculin. Klebs introduced his tuberculocidin in 1891, and this is still to be obtained. Alfred Thamm has brought forward a tuberculo-albumin, Landman "tuberculo-," Hirschfelder an "oxytuberculin," and Spengler a combination of tuberculin and tuberculocidin.

Substances similar to Koch's new tuberculin have been described by several experimenters; Buchner and Hahn, for instance, have made what they term "tuberculo-plasmin." Other experimenters have used for the preparation of immunizing bodies tubercle bacilli from other than human sources; McFadyean, for instance, has used avian tubercle;

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Terre, fish tubercle ; Dieudonné, frog tubercle ; and Friedmann, turtle tubercle.

Von Behring has immunized cattle with the products of living human tubercle bacilli ("bovovaccin"), and has proposed that the milk of such immunized cows should be used for the nourishment of children. Von Baumgarten has also made calves immune, by means of a human tuberculin, against invasion by bovine tubercle. Koch and Klemperer have worked in the same direction, and the recent experiments of Calmette should be mentioned. Von Behring has introduced a substance called "tulase," recommending it for immunization of human beings against tuberculosis, and von Ruck has experimented in much the same way.

Besides the above-mentioned endeavours to produce active immunity, attempts have been made to secure good results by means of a passive immunity. The first experiments in this direction were made by E. Maragliano in 1895. Sera have also been introduced by Richet, Hericourt, and Babes.

A. Marmorek has recommended a special anti-tuberculosis serum which has been used to some extent. I myself have used it in thirty-five cases, but without any encouraging results. Among others, Trudeau, Baldwin, Auclair, De Schweinitz, Prioleau, Paquin, Redou, Chenot, Ferran, Dörrenberg, and Broca have also endeavoured to discover satisfactory means for the establishment of an immunization against tuberculosis.

Progress has been made by the production of an active rather than a passive immunization. It seems very probable that the final solution of the problem will be found in this direction. We can regard it as nearly certain that the treatment of tuberculosis by vaccines or sera will before long be well established.

What is the best means to secure this active immunization is still under discussion. Many hold that immunization substances which contain the organisms themselves more or less changed, and not only their toxins, are the less dangerous, and give more hope of good results.

Here arises the question as to the means which should be adopted to render the tubercle bacilli so enfeebled that, while their immunization matters do not disappear, dangerous substances shall be got rid of.

From this point of view I have experimented a long time. Finally I have succeeded, by the use of different lights and chemical materials, in obtaining a substance from the pure culture of the human tubercle bacilli which seems to be not at all dangerous, and which also undoubtedly exerts healing properties. This substance I have called "tubos." That it is not at all dangerous I have proved by elaborate

experiments on guinea-pigs, animals which, as is well known, are peculiarly sensitive to tuberculosis infection. I injected comparatively large doses of "tubos" into young guinea-pigs, and then followed the development of them at the same time as that of the development of the young of the non-injected control-animal. The young of the injected animals develop well, and with the same celerity as the young of the non-injected animals. This fact, it seems to me, shows that "tubos" is not dangerous for guinea-pigs. These experiments have been repeated with similar results in rabbits.

In experiments on animals this material, "tubos," when injected, either before or after inoculation with tubercle bacilli, has shown in a remarkable degree a hindering influence to the development of tuberculous lesions.

The guinea-pigs injected with "tubos" have died, on the average, within eighty-four days; some, indeed, have survived the infection, while again the control-animals died, on the average, within forty-one days. It is not easy, as is known, to measure the quantity of tubercle bacilli which is enough to kill the animals in question. It is possible that I have injected much more than the simple lethal dose of the tubercle bacilli in these experiments, and one cannot quite accurately estimate the preventive power of "tubos," although a remarkable preventive influence can, without doubt, be observed. At the present time I am engaged in researches regarding the exact lethal dose of the tubercle bacilli, and how best such may be measured.

I have shown by my experiments that "tubos" was not dangerous, but had a preventive and curative influence. I extended my investigations to the human tuberculous subject, taking cases of pulmonary consumption and other tuberculous diseases. But to be quite sure that the material was not dangerous for the human body, I have injected the material subcutaneously three times in the week during two months into myself, and have tried to observe if anything prejudicial occurred—weight, working capacity, appetite, sleep, temperature, all remained normal, and no pain or other troubles were remarked. I then began to use "tubos" carefully, although in much smaller doses than I had used on myself. I first employed it for the treatment of consumptive patients in my own private hospital, Lepokoti Tilkka (fifty beds), in the near neighbourhood of Helsingfors. For the most part only such cases as were far developed (those where the consumption was in both lungs and sometimes in the throat) were treated with "tubos" injections.

Up to the present time fifty cases have been treated. The treatment has been completed in about thirty cases, or the patients are now under observation.

From these fifty cases one can estimate that 26·7 per cent. are

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“cured” or “arrested,” while 46·9 per cent. appeared improved, and 18·3 per cent. remained unchanged. Most of these, it must be remembered, have been treated only for a very short time ; the rest have become worse or have died. Among the “cured” cases was that of a young woman who had tuberculous peritonitis.

I have used “tubos” in emulsion 1 : 1000 of the dry substance. The injection doses are as follows :

For the guinea-pigs,	0·001	dry substance ;	it is 1	cm. <sup>3</sup>	of the emulsion.
For the rabbits, also the same	...	...	...	0·001	dry substance.
For myself	...	...	...	0·0004	”
For human patients in the beginning...	...	...	...	0·0002	”
For human patients later	...	...	...	0·0003	”

The injection was always used subcutaneously, and did not cause boils. If the injection has been made in the back as usual, no swelling or other irritation has been observed, and only very seldom a little pain on the injected place, so that the material seems to have been well absorbed. But if I injected in the arms or lower part of the legs, a little, hard and painful swelling has sometimes been observed, which has, however, disappeared within a few days. No great pain nor rise in temperature has been observed. In many cases, on the contrary, the temperature has become lower after the injection.

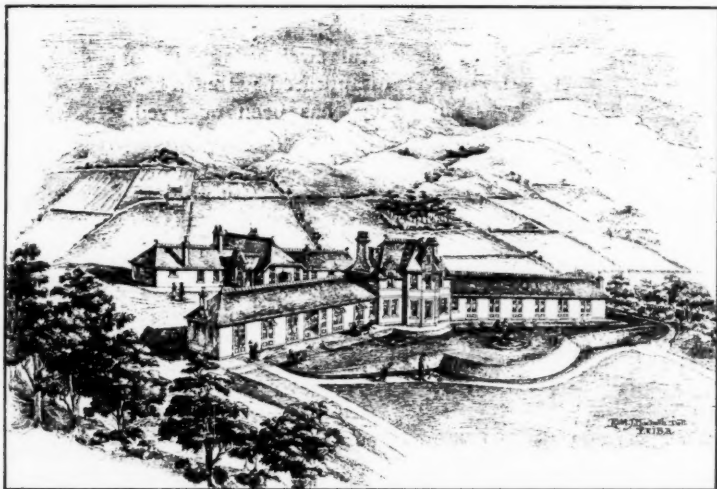
I must also add that during the treatment with “tubos” the patient has been subjected to rigid dietetical management as well as open-air treatment. But even allowing for the action of these remedial factors, I consider the results with “tubos” to have been very encouraging.

I well understand that an experiment with such a new substance is very difficult, and results may easily mislead. It is quite clear to my own mind that the experiments here referred to, and the results obtained, are all too small to allow us to draw any certain conclusions. They, however, seem to justify, and even demand, further investigation.

## INSTITUTIONS FOR THE TUBERCULOUS.

### THE SEAFORTH SANATORIUM, ROSS-SHIRE, SCOTLAND.

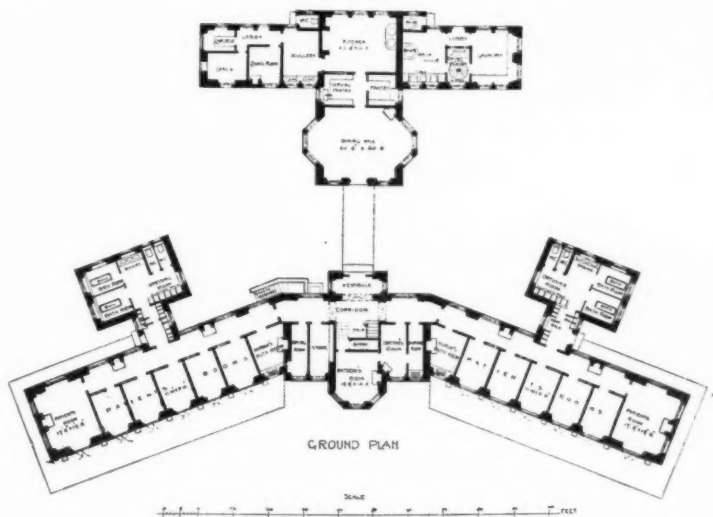
THROUGH the munificence of Colonel Stewart Mackenzie, of Seaforth, and Mrs. Stewart Mackenzie, the North of Scotland has been provided with a modern, fully equipped and adequately endowed sanatorium for the treatment of consumptives. The cost amounted to £8,000, and



THE SEAFORTH SANATORIUM, ROSS-SHIRE, SCOTLAND.

it has been endowed with £100,000. The building has been designed by Mr. Robert J. Macbeth, F.R.I.B.A., of Inverness, after the plan of the Brompton Hospital Sanatorium at Frimley. The sanatorium is admirably placed on the Brahan Estate, on the west side of Maryburgh, not far from Dingwall. It has a south aspect overlooking Cromarty Firth, and is surrounded by well-wooded and otherwise protected lands excellently adapted for the needs of the patients. As indicated in the accompanying illustration and plan, the buildings consist of two detached blocks. The front block contains the patients' rooms and quarters for the administrative staff. The central part is three stories in extent, and

here are placed matron's and nurses' rooms and the consulting-rooms and dispensary. Accommodation is provided for twelve cases, but is capable of expansion. Each patient has a separate room. The south front has an extent of 184 feet, and provides an excellent sheltered promenade and resting-ground for patients. The north block contains the dining-hall, serving pantry, kitchen, stores, and laundry. The buildings throughout are lit by electricity. A plentiful supply of pure water is available. Sewage is discharged direct into tidal waters. In every respect the institution is fully equipped for the work it is about to undertake. The sanatorium is restricted to natives of Ross-shire.



PLAN OF THE SEAFORTH SANATORIUM.

Admission is absolutely free, but only such cases will be admitted as are approved by the medical staff. The sanatorium is to be reserved for incipient cases. It is expected that the educational influence of the establishment will be far-reaching, and it is hoped that valuable research work may be undertaken. There is every reason to believe that this latest addition to the sanatoria of Scotland will accomplish much towards exterminating what is a veritable scourge to large numbers of the dwellers in these northerly regions of Great Britain.

W. MACLEAN, M.B., C.M., D.P.H.,  
*Medical Superintendent.*

## THE ALLT-Y-MYNYDD SANATORIUM, WEST WALES.

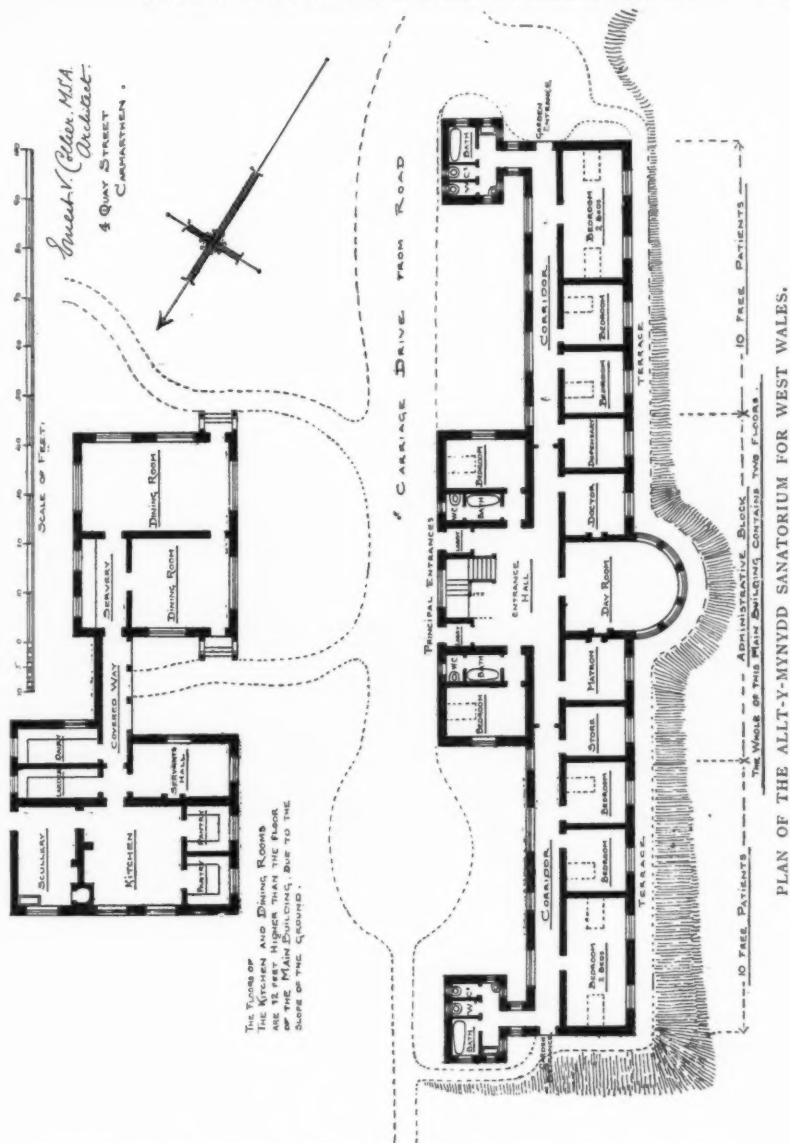
THE Allt-y-Mynydd Sanatorium, for the poorer classes in Carmarthenshire, Pembrokeshire, and Cardiganshire, has been erected entirely by private subscriptions extending over a period of six years. The buildings are situated on a mountain slope 850 feet above sea-level, in a pine-wood nearly 14 acres in extent. They consist of an administrative and patients' block, containing twenty beds, two large day-rooms, officers' quarters, and offices. A separate block contains kitchen, dining-rooms, etc., and there are also laundry and drying-rooms, engine-house and



THE ALLT-Y-MYNYDD SANATORIUM, WEST WALES.

stables. The two wings shown in the accompanying illustration are not yet built. They are ultimately intended for paying patients, each wing containing four beds, and will be added as soon as the necessary funds are provided. There is ample room for graduated walks and sleeping shelters. A garden will also be provided later on. The sanatorium, the only one in Wales for poor people, has cost about £8,000, and will be supported entirely by voluntary contributions and small payments from the patients. It is estimated that the latter will produce about £200 a year, leaving £1,300 to be collected. The sanatorium is situated on the north-west corner of Carmarthenshire, six miles from Lampeter and three miles from Llanybyther, which is the nearest station. The first stone was laid by H.R.H. Princess





Christian of Schleswig-Holstein on April 26, 1905, and Her Royal Highness has graciously consented to open it on July 20.

DOUGLAS A. REID, M.D.

### ALTADORE SANATORIUM.

ALTADORE SANATORIUM, in County Wicklow, is one of the oldest of Ireland's private sanatoria for consumptives. It was established in the beginning of 1901, and is conducted on open-air lines. Situated in a well-wooded demesne of 500 acres, on the southern slope of Altadore Hill, at a height of 750 feet above sea-level, it forms an ideal spot for the treatment of tuberculous cases. It is completely sheltered from north, east, and west winds, the climate is decidedly bracing, the rainfall relatively low (30 inches), and the views are extensive and beautiful. Constant medical supervision is exercised over all the patients, and their diet,



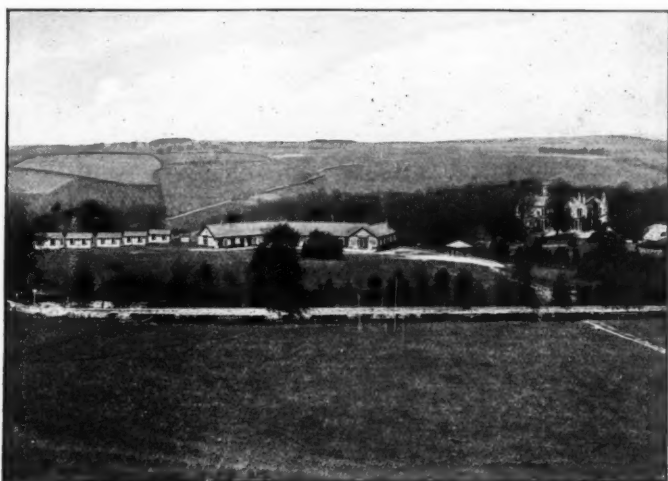
ALTADORE SANATORIUM, IRELAND.

rest, exercise, etc., regulated according to the requirements of individual cases. The inclusive fee is £3 3s. Specially designed sleeping bungalows and shelters have been erected, and there are miles of sheltered walks of all gradients within the grounds. The sanatorium is within easy driving distance of Greystones Station, which is only seventeen miles from Dublin, and can be reached by a good service of trains in fifty minutes.

J. C. SMYTH, M.D.  
*Resident Physician.*

### BELLEFIELD SANATORIUM, LANARK.

BELLEFIELD SANATORIUM for consumptives is situated near Lanark and about thirty miles from Glasgow. It has been at work since November, 1904, under the management of the Glasgow and District Branch of the National Association for the Prevention of Consumption. The estate is well placed at an elevation of from 500 to 600 feet, is well protected from the east and north-east winds, and has a subsoil of



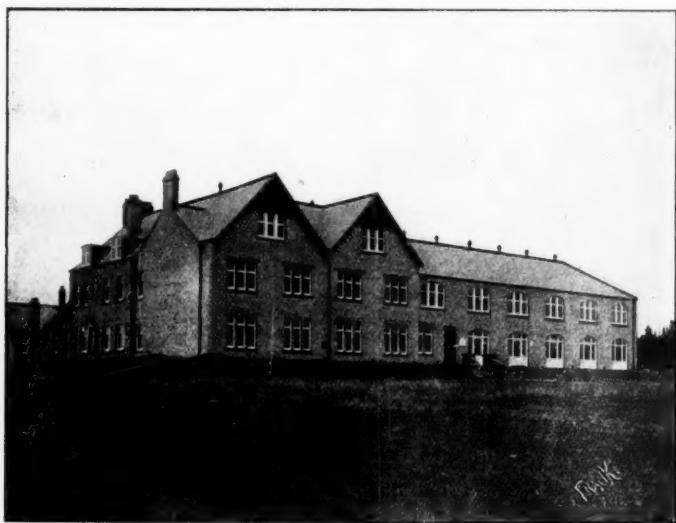
BELLEFIELD SANATORIUM, LANARK.

a light and gravelly nature. The sanatorium provides accommodation for thirty patients, and twenty-two additional beds will be added this summer. Since its opening 330 males of the commercial and artisan classes have been treated with encouraging results. Patients are drawn from Glasgow and neighbourhood. The qualifications for admission include residence in locality, suitability for treatment, and a payment according to circumstances.

JNO. ANDERSON,  
*Secretary and Treasurer.*

## CHILDREN'S SANATORIUM, STANNINGTON, NORTHUMBERLAND.

THE sanatorium at Stannington for consumptive children was opened by the Duke of Northumberland last autumn. Patients of both sexes under the age of sixteen are admitted, and the results so far have been excellent. The institution costs about £100 a bed. Maintenance charges work out at about £1 per patient weekly. Milk from "tested" cows, fresh eggs, and vegetables are supplied by the adjacent farm.



CHILDREN'S SANATORIUM, STANNINGTON.

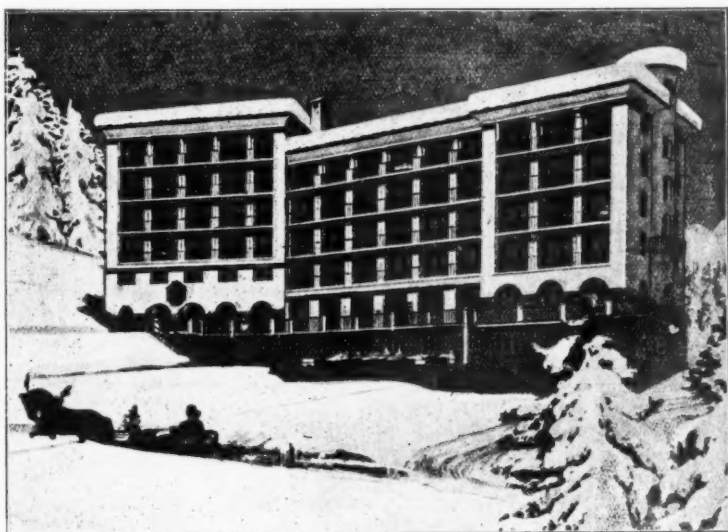
The boys can take part in farm duties. The sanatorium and farm belong to the Newcastle Poor Children's Holiday Association. The local Guardians and others contribute to the maintenance of most of the patients, and there are also a few wards for paying patients. The building is of brick and stone, and is lighted by acetylene gas.

T. M. ALLISON, M.D.,

*Hon. Physician.*

## QUEEN ALEXANDRA SANATORIUM, DAVOS.

THIS institution is intended to bring the benefits of the well-known Alpine health resort, Davos, within the reach of patients of small means belonging to any English-speaking nationality who are suffering from consumption in its early stages. Patients of both sexes, irrespective of creed, will be eligible for admission, the only obligations being medical suitability and the inability to afford the ordinary prices of local hotels or *pensions*. The building is being erected in an exceptionally sunny and sheltered spot, about 300 feet above the level of the Davos Valley.



QUEEN ALEXANDRA SANATORIUM, DAVOS.

Strict regard is being given to economy, but the sanatorium will be constructed on the most improved modern lines. When once started, it is expected that the sanatorium will be self-supporting by the payments of the patients. The uniform charge to patients will be about 3*rs.* 6*d.* weekly. The Patron of the institution is Her Majesty Queen Alexandra, who has not only given her name, but also a substantial contribution to its funds. Further contributions are urgently needed in order that the sanatorium may be completed for the reception of patients at an early date.

H. C. WRINCH,  
*Local Secretary.*

## HEALTH STATIONS.

### SWEDEN.

To most Englishmen, Sweden is a country unexplored and but little known. And yet it offers attractions for health and holiday resort which in variety and multiplicity can hardly be rivalled. The Swedes are a highly educated, cultured, hospitable people, possessing exceptional initiative and organizing power, ready to undertake the unravelling of medico-sociological and other problems, and bringing to bear on all questions, not only intellectual powers of a high order, but talents having exceptional executive force—in short, a race contact with which almost necessarily exercises a stimulant action on the insular and prejudiced Britisher. Sweden is a land offering almost limitless possibilities and opportunities, with climatic and geographical conditions widely differing, manifold agencies for the development of industries and social systems, numerous means for the pursuit of sport, and special privileges for the study of the arts and sciences. Particularly to the student of medical and sociological sciences Sweden has much to reveal.

During the past winter I have had the opportunity of travelling through practically the length and breadth of the land, visiting some of its chief health stations, seeing much of its opportunities for winter sport, studying something of its best hygienic and medicinal centres, and conferring with not a few of its most distinguished leaders. Being considerably impressed with the great advantages which may accrue from a visit to Sweden and a study of Swedish methods, I here venture to present a few notes which may possibly act as incentives and afford suggestions and directions.

#### Travel Notes.

Sweden is not so inaccessible as many think. Good sailors and those desirous of also visiting Norway will probably do best by crossing the North Sea to Bergen or Christiania by the excellent steamships provided by Messrs. Thomas Wilson, Son and Co.,<sup>1</sup> and other services, and thence proceeding via Christiania by night train to Stockholm or Gothenburg. The Thule Line, a Swedish service, run good boats from London and Granton to Gothenburg.<sup>2</sup> Many, however, will prefer one of the so-called overland routes—probably that via Esbjerg and Copenhagen, or the Royal Mail Route via Queensborough and Flushing.<sup>3</sup>

<sup>1</sup> A useful booklet, giving full particulars, is issued by Messrs. Thomas Wilson, Sons and Co., Ltd., Hull.

<sup>2</sup> Particulars regarding the Thule Steamship Company, Ltd., can be obtained from their agents: Messrs. Phillips and Graves, 26, St. Dunstan's Hill, London, E.C.; and Messrs. Chr. Salvesen and Co., in Granton, Leith, and Glasgow.

<sup>3</sup> Much useful information respecting routes and fares to Sweden and practical details concerning many of the centres for winter sports may be found in "The Winter Sports Annual, 1907-8," edited by E. Wroughton. London: Simpkin, Marshall and Co. Price 2s.

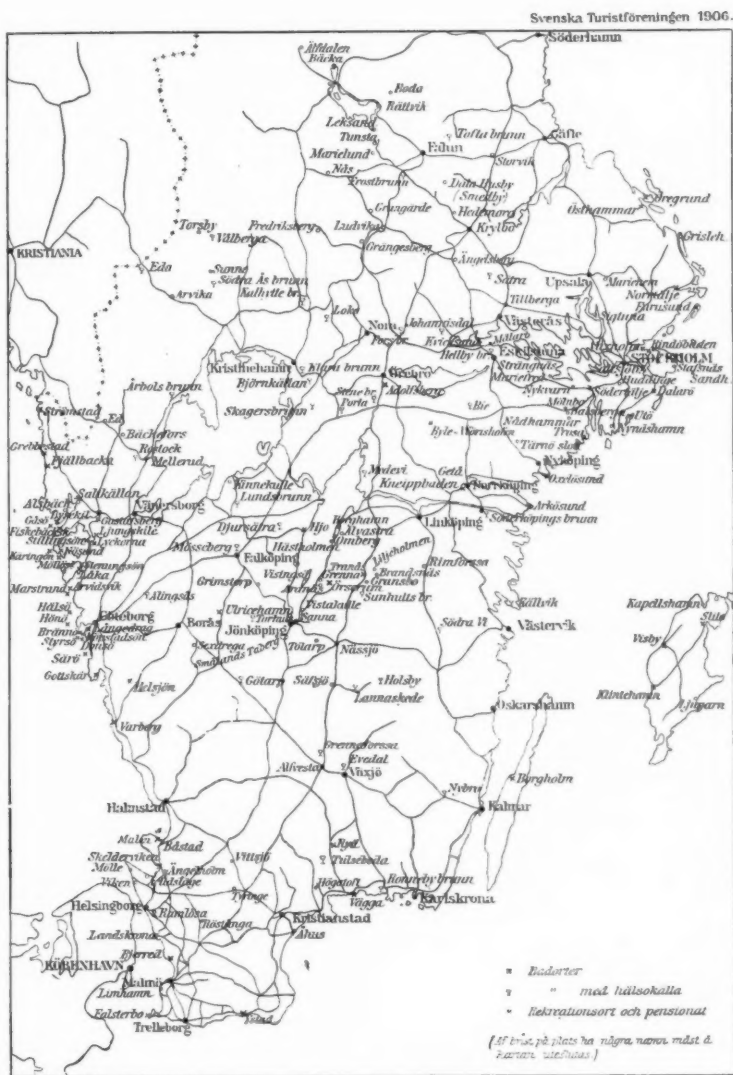


FIG. 1.—MAP INDICATING CHIEF HEALTH STATIONS IN SWEDEN.



Every traveller in Sweden should possess the latest issue of the Swedish "Bradshaw"—i.e., "Sveriges Kommunikationer."

I desire to commend very specially to all visitors to Sweden the very ably conducted Swedish Touring Club.<sup>1</sup> To its courteous and most painstaking secretary, Mr. Valdemar Langlet, I am indebted for considerable information and much kindness, and permission to reproduce his very serviceable map, indicating the chief health stations (Fig. 1). The Swedish Touring Club, since its establishment in 1884, has done much to open up Sweden to visitors from other lands, as well as to reveal its beauties and opportunities for health and sport to the Swedes themselves.

### **The Anti-Tuberculosis Movement in Sweden.**

In regard to the prevention and arrest of tuberculosis, I know of no country where, considering its size, population, and opportunities, more interesting, suggestive, and serviceable work is being conducted than in Sweden. Thanks to the kindness of Dr. Bertil Buhre, the Secretary of the Swedish Anti-Tuberculosis Association, I was enabled to see much of what is being done for tuberculous subjects in Sweden. The tuberculosis problem is being attacked with energy, wisdom, and a far-seeing discernment which already is showing evidences of rich returns in increase of national health and happiness. The serious anti-tuberculosis reformer must visit Sweden if he would see some of the best anti-tuberculosis measures in practical work. I was particularly impressed with the Tuberculosis Museum and the dwellings for consumptive workmen which I visited in Stockholm. The Anti-Tuberculosis Dispensary in this city is also a remarkable experiment, which we could wish might be imitated in all our large British centres of industry. The proposed State action in regard to the proper care of all consumptives offers much material for thought. But it is unnecessary to refer in detail to the many and varied forms of anti-tuberculosis service which a wisely directed public spirit is energizing in Sweden, for these have been explained by Dr. Buhre in the last number of this Journal.<sup>2</sup>

### **Sanatoria for Consumptives.**

The number of modern sanatoria for tuberculous cases in Sweden is still somewhat small. Public establishments for consumptives, thanks to the far-seeing wisdom and generosity of the late King Oscar II., together with the wise action of the Riksdag, the Swedish

<sup>1</sup> The Swedish Touring Club (Svenska Turistföreningen) has central offices at 2 and 4, Norrlandsgatan, Stockholm, where particulars of all health and sporting centres may be obtained. Every year an important illustrated directory to all Swedish sanatoria, etc., is issued: "Hvilo-och Kurorter i Sverige." Through the courtesy of the editor and secretary, we are enabled to reproduce a helpful map of Swedish health stations from this annual (Fig. 1). Other important publications are issued by this excellent organization, but special praise must be given to "The Swedish Touring Club Guide—Sweden" (which can be obtained from Messrs. Thomas Cook and Son, Ludgate Circus, E.C.). Another valuable volume for the English visitor is "Sweden: a Short Handbook on Sweden's History, Industries, Social Systems, Sport, Art, Scenery, etc.," issued by the Swedish Tourist Traffic Society (Turisttrafikförbundet), Stockholm.

<sup>2</sup> Buhre, B.: "The Crusade against Tuberculosis in Sweden," BRITISH JOURNAL OF TUBERCULOSIS, April, 1908.

Parliament, have been started at Halahult, Hesselby, and Osterås.<sup>1</sup> Private sanatoria for tuberculous patients have also been recently opened at Romanås and Säfsjö, and within the next few years it seems probable that many other institutions will be established. Sweden certainly in many districts offers climatic and other conditions well suited to the requirements of a successful hygienic treatment of tuberculosis. Especially during the winter good results should be obtained. It must, however, be admitted that there is much room for improvement among many Swedes in regard to personal and domestic hygiene.

#### **The Sporting Spirit of Sweden.**

Sweden has won world-wide distinction for the excellence of its system of physical training. Thanks to the kindness of Professor

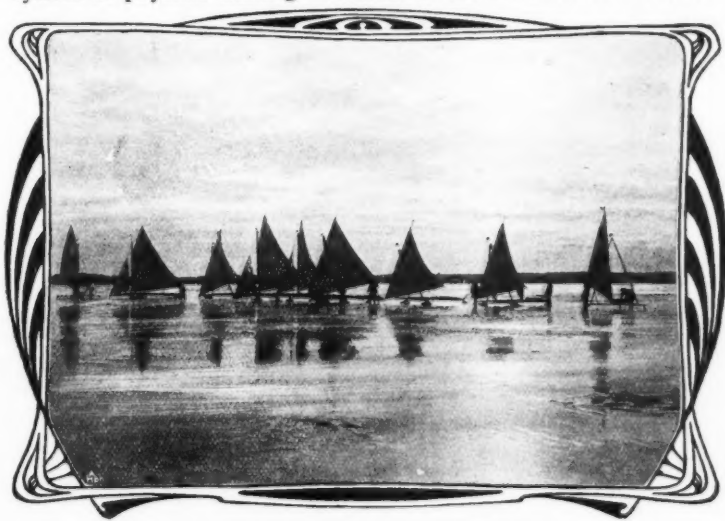


FIG. 2.—ICE-YACHTING AT SALTSJÖBADEN.

Törngren, I was enabled to study for myself something of the methods of Swedish gymnastics. Sport has been systematized and organized in this land to a high pitch of perfection, in great measure through the work of Professor V. G. Balck, the present Director of the State Institute, originally founded by P. H. Ling. Winter sports especially possess a charm, and have won a popularity which can only be understood when actually witnessed. Ski-ing, "the sport of sports," is the great national pastime. Skating, however, is an art in which Swedes excel. All other forms of winter sport may be enjoyed in Sweden. To fully realize the influence of these many and varied forms of outdoor exercise on the young life of the country, it is

<sup>1</sup> See Dr. Buhre's article on "The Crusade against Tuberculosis in Sweden," in the *BRITISH JOURNAL OF TUBERCULOSIS*, April, 1903.

necessary to visit the "Idrottsparken" in Stockholm, or witness the "meets" in connection with the local "Idrotts Förbunds" in different parts of the country.

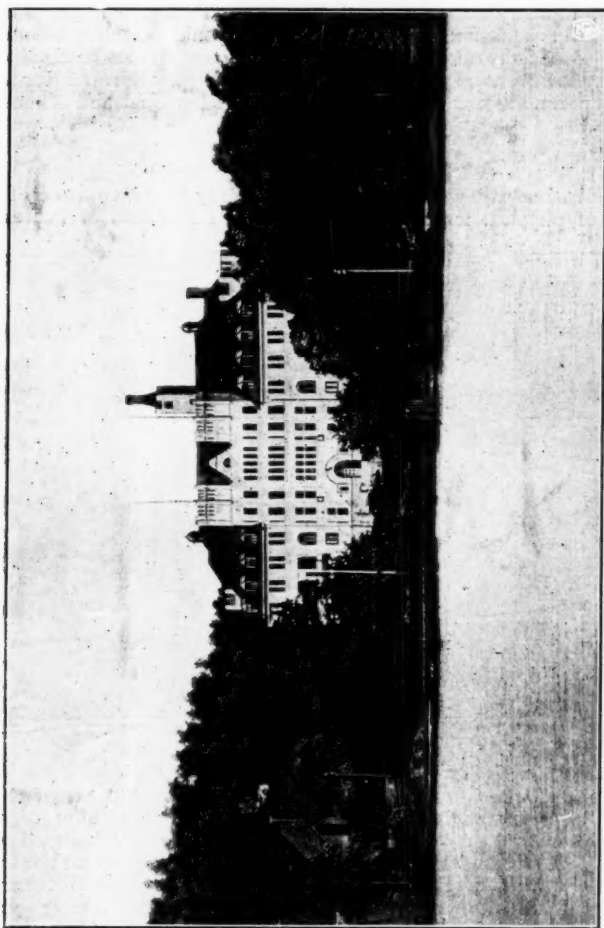


FIG. 3.—SALTSJÖBADEN HYDROPATHIC ESTABLISHMENT, NEAR STOCKHOLM.

Clearly, the open-air sports of Sweden must be accounted among the most important and valuable of agencies for the physical, and perhaps we might add the mental and moral, development of the people. As "anti-tuberculosis" forces their value can hardly be over-estimated.

### Health Stations.

Sweden can offer an almost endless variety in regard to health and holiday resorts. Among the many, two chief centres may be mentioned as being particularly suited to the tastes of English visitors: Saltsjöbaden, the Riviera of Stockholm, and the stations on the Göteborg-Borås-Alfesta Railway, particularly Hindås and Hultafors.

Saltsjöbaden is situated nine miles from Stockholm, on the picturesque Baggensfjärd. In summer there is a good steamboat service. It is a charming resort at all times of the year. In winter the opportunities for ice-yachting, skating, ski-jumping, and other sports are of the best (Fig. 2). In summer, sailing, bathing, fishing, and other outdoor delights may be enjoyed to the full. The Grand

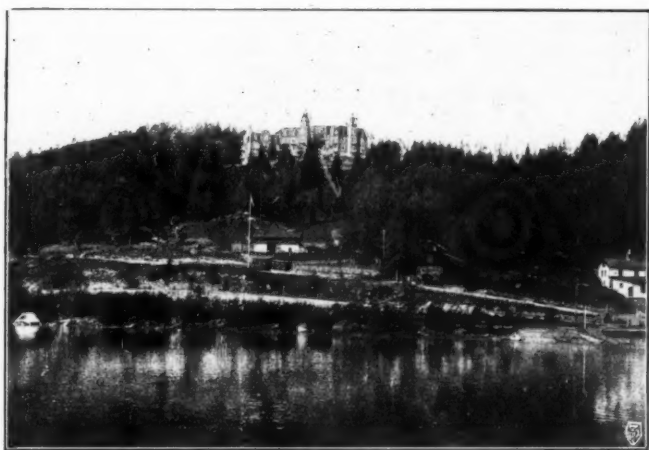


FIG. 4.—HULTAFORS SANATORIUM, SWEDEN.

Hotel is a particularly delightful place for the English visitor. Near at hand is an excellent Sports Pavilion, with first-class covered tennis courts. Through the kindness of Dr. Emil Zander, I was enabled to inspect the admirable Saltsjöbaden Hydropathic Sanatorium, which is unique in its advantages for physical therapeutics (Fig. 3). The Gymnasium contains a collection of about forty different appliances for the conduct of medico-mechanical procedures according to the Zander system. The Baths are also first class. This establishment is well fitted to the requirements of many English and American visitors.

By the kindness of Captain Sprinchorn and Mr. Charles Östrand, I was enabled to visit several of the important health stations on the most excellently constructed and ably managed "Göteborg—Borås—Alfvesta Järnvägar."<sup>1</sup> At Hindås a new and delightfully situated first-

<sup>1</sup> A well-illustrated descriptive handbook—"En Färd Med Göteborg—Borås och Borås—Alfvesta Järnvägar," has been issued, and we understand an English edition is in preparation.

class Tourist Hotel has been opened. It overlooks lake and woodland, and offers unrivalled opportunities for all kinds of sport the year round. It has accommodation for 100 visitors, and after a thorough inspection of the establishment and neighbourhood I have no hesitation in strongly recommending it as a particularly desirable centre. Near the hotel is a charming Sports Club House and Grounds, or "Idrottsgården," membership of which is open to visitors at a merely nominal charge.<sup>1</sup>

At Hultafors another first-class Health Station Hotel has recently been opened. Dr. Björkman, the medical director, kindly took me over the whole establishment. It is thoroughly up to date in its equipment for hydro-therapeutic, physical, and electrical treatment. It is charmingly situated at an altitude of over 1,000 feet, overlooking the peaceful Viared Lake, and the surrounding country is rich in varied charms (Fig. 4).

Gothenburg can now be so comfortably and speedily reached from England that these new districts opened up to the health and holiday seeker should not lack visitors.

Sweden is a far-extending country, rich in natural beauties and resources, with a hospitable and highly educated people, and now that serious and systematic effort and enterprise are opening up this land of lakes and rivers, highlands and forest regions, to visitors from all countries, it is well that Englishmen should not be ignorant nor neglectful of the delights and advantages which are within their easy reach.

T. N. KELYNACK, M.D.

<sup>1</sup> Sportsmen intending to visit this district should consult the well-illustrated handbooks, "Göteborgs Idrotts Förbunds Årsskrift." Göteborg: Bröderna Töpels Boktryckeri.

## REVIEWS AND NOTICES OF BOOKS.

## THE OPSONIC THEORY.

DR. EGBERT MORLAND'S "Inaugural Dissertation" for the Doctor's Degree of the University of Bern forms a clear and concise statement of the opsonic theory and practice, and the German-speaking profession is to be congratulated on having the subject so admirably laid before them.<sup>1</sup> The author not only elucidates the work of others, but also supplies a considerable amount of personal research on the opsonic index under various conditions. Especially valuable is his study of the effects of menstruation on the opsonic power. An interesting point on which he touches besides is the opsonic index under the German method of tuberculin administration with repeated and increasing dosage. Among six cases treated thus with Denys' preparation he finds the highest index 0.94. More work on these lines would be of interest, though, apart from serious lowering of the index, it seems that good might be achieved with only moderate opsonic power by a method whose aim is local hyperæmia, and increased tolerance of the tuberculous poison. Dr. Morland's thesis supplies a need, for English scientific work is too much neglected by our European confrères, and we hope it will be read as widely as it deserves. CLIVE RIVIERE, M.D.

## THE OPSONIC METHOD.

The study of opsonins has opened a new field for research. Among the many recent publications dealing with the subject, that of Dr. R. W. Allen deserves consideration. His book is described as "a short compendium for general practitioners, students, and others."<sup>2</sup> Had the author called it a useful, valuable, and reliable compendium and book of reference upon the subject, the description would have been equally accurate. Since Wright's discovery a few years ago arrested the attention of inquirers after medical truth, an amount of literature which to the reviewer is truly appalling has appeared. So great is the stream which continues to flow that it is practically impossible for the ordinary physician to keep pace with it. On that account the appearance of Dr. Allen's manual is specially opportune. It places within convenient reach of the busy practitioner a plain and fairly comprehensive statement of the subject. Beginning with a historical résumé of the evolution of our knowledge of the nature of opsonins, and the origin of the opsonic form of treatment, it proceeds to describe in detail the technique of the determination of the opsonic index and the preparation of special vaccines. The

<sup>1</sup> "Über die Klinische Bedeutung der Opsonine." By Egbert C. Morland, M.B., B.Sc. Pp. 40. Samaden: Engadin Press Co. 1908.

<sup>2</sup> "The Opsonic Method of Treatment: A Short Compendium for General Practitioners, Students, and Others." By R. W. Allen, M.B., B.S. Pp. 138. London: H. K. Lewis. 1907. Price 5s. net.

significance of the opsonic index in health and disease is then discovered, and its diagnostic and prognostic value indicated. The importance of the claims of tuberculous disease is fully realized, and a whole chapter is devoted to discussing the conditions and limitations attaching to the employment of tuberculin as a therapeutic agent. Staphylococcal, streptococcal, pneumococcal, gonococcal, and other vaccines of a less familiar nature, together with their relation to the treatment of disease, are also fully described. Two of the most interesting chapters deal with the vaccine treatment of common colds and eye diseases respectively. Records for the most part of the author's own researches in those domains, they constitute two of the most valuable sections which the book contains. The book is one which we confidently recommend to all who wish to make themselves familiar with what many of us find the most attractive and inviting section of medicine—namely, the vaccine treatment of disease.

DAVID LAWSON, M.D.

### TUBERCULOSIS AND OCCUPATION.

In the study of the many factors concerned in the initiation and maintenance of consumption, occupation must be accorded a foremost place. The relation of trades to disease has of recent years received considerable attention, and wisely so. Since the appearance of the late Dr. Arlidge's classical work on "The Diseases of Occupation," no such notable volume dealing with the subject has appeared as that just published by Professor Thomas Oliver, of Newcastle.<sup>1</sup>

It affords a masterly exposition, suited to the requirement both of the general and professional reader, of the main facts dealing with the effects of industries upon health. In these democratic days, when the needs of the workers are being recognized, and attempts are being made to meet them judiciously and effectively, a work such as this is opportune, and should be studied by statesmen and administrators of every rank, students of all medico-sociological problems, practical workers in every scheme making for social betterment, as well as medical officers of health and medical practitioners generally. We can but hope also that Dr. Oliver's work will be read by labourers belonging to every form of industry. To students of the tuberculosis problem there is much in these pages which will interest. The important association of trauma and tuberculosis is discussed, and the opinion expressed that "tuberculous lesions of lungs and joints may be latent, and for a time unattended by symptoms until an injury, perhaps, is received, when a tuberculous lesion that was dormant becomes active." Valuable information is given as to the occurrence of pulmonary consumption among file-cutters, printers, cotton-weavers, coal-miners, stonemasons, laundry workers, and others. The description of "gold-miners' phthisis," a disease on which the author has thrown much light, is particularly valuable, and goes to show that Rand-miners' phthisis is "in the first instance a purely local affection of the lungs, the result of irritation by dust, and

<sup>1</sup> "Diseases of Occupation, from the Legislative, Social, and Medical Points of View." By Thomas Oliver, M.D., F.R.C.P., Physician, Royal Victoria Infirmary, Newcastle-upon-Tyne; Professor of Physiology, Durham University. Pp. 427. London: Methuen and Co. 1908. Price 10s. 6d. net.



without tubercle. When the disease becomes tuberculous, it is in consequence of superadded infection." Dr. Oliver, by the able editing of "Dangerous Trades," won distinction; but the present volume will add to his reputation as our most reliable and best-informed authority on all that concerns the relationship of occupation to disease.

### PULMONARY TUBERCULOSIS.

Among the many excellent works recently published on tuberculosis of the lungs, that just issued by Dr. Francis M. Pottenger ranks among the best.<sup>1</sup> It is eminently scientific and practical, thoroughly up-to-date and not too rashly speculative; in short, an ideal volume for the practitioner who would keep abreast of rapidly progressive studies relating to tuberculosis. Special attention is devoted to methods of diagnosis, the real meaning of symptoms, and the rationale of physical signs. The author's description of his method of elastic-tube percussion is of much interest. The work is one both for the family practitioner and the lung specialist, for treatment is dealt with in a particularly explicit and helpful manner. Where praise is everywhere merited, it is invidious to individualize; but we must particularly congratulate Dr. Pottenger on the admirable sections dealing with the ill-understood and difficult problem of tuberculosis in childhood. Here—as, indeed, throughout the volume—is manifest a keen and far-seeing scientific discrimination, guiding prophylactic and ameliorative forces along right paths, and thus making this volume one of the sanest and most sensible contributions to the pathology and therapeutics of pulmonary tuberculosis.

### ABDOMINAL TUBERCULOSIS.

There is a danger that both the public and the profession, in their endeavour to understand and circumvent pulmonary tuberculosis, may forget and neglect the adequate study of other forms of tuberculosis. We therefore particularly welcome the able, comprehensive, and very complete monograph recently issued by Mr. A. Ernest Maylard on abdominal tuberculosis.<sup>2</sup> This work should be read by every pathologist, physician, and surgeon. It is a masterly exposition of tuberculous processes as observed in the abdominal viscera. Pathological considerations, clinical manifestations, and practical procedures are all discussed with a sound judgment born of extensive experience, amplified by a knowledge of the literature of the subject. A particularly valuable feature of the work is the well-selected bibliographical references. The illustrations are numerous, and have been admirably executed from photographs specially taken of actual specimens in a number of representative museums. Records of over fifty cases are given, and add much to the interest and value of the volume. Where all is so excellent, it is

<sup>1</sup> "The Diagnosis and Treatment of Pulmonary Tuberculosis." By Francis M. Pottenger, A.M., M.D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Pp. 377. London: Baillière, Tindall and Cox. 1908. Price 15s. net.

<sup>2</sup> "Abdominal Tuberculosis." By A. Ernest Maylard, M.B., B.S., Surgeon to the Victoria Infirmary, Glasgow. Pp. xvi., 360. With 57 illustrations. London: J. and A. Churchill. 1908. Price 12s. 6d. net.

difficult and dangerous to particularize; but the sections on tuberculosis of the female genital organs and tuberculosis of the peritoneum merit special praise. Dr. Walter K. Hunter contributes a helpful article on "The General and Prophylactic Treatment of Tuberculosis"; but we could have wished that the references to this important chapter had been fuller.

#### THE HYPERÆMIC TREATMENT OF TUBERCULOSIS.

Among modern methods of dealing with tuberculosis, Bier's hyperæmic treatment has attracted world-wide attention. The appearance of an authoritative manual in English, descriptive of its principles and practices, is to be welcomed; and Professor Willy Meyer and Professor Victor Schmieden and their publishers are to be congratulated on the admirable way in which they have provided for the requirements of English and American practitioners.<sup>1</sup> This work will appeal to physicians and surgeons, and indeed to most of the so-called specialists, and we commend it also to the notice of all general practitioners. In a series of concise, lucid, well-arranged, and admirably illustrated chapters the advantages, methods, and general rules for the application of the treatment are fully explained. A special section is devoted to the management of tuberculous lesions by the production of hyperæmia. The details given and instructions afforded are particularly full and serviceable, and certainly no practitioner who has to deal with tuberculous cases should fail to study this important work. It is contended that the production of hyperæmia in cases of infectious inflammations is painless in its application, promptly relieves already existing pain, aids surgical interference, facilitates the obtaining of a good cosmetic result, and tends also to preserve the function of the affected part. The book is exceptionally well printed and the illustrations are beyond praise.

#### THE NUTRITION OF THE TUBERCULOUS.

Although the unscientific era of "forced feeding for the tuberculous" has happily passed, the scientific study of all pertaining to the nutrition of the consumptive and other tuberculous sufferers is receiving increased attention. It is clear that we still await reliable direction in matters relating to the dietary, not only of the sick, but of the healthy. Meanwhile, food quacks and dietetic faddists flourish. Professor Graham Lusk's work on nutrition is one which all responsible for the care of tuberculous patients would do well to consult.<sup>2</sup> It is a successful attempt to review the scientific substratum upon which rests our present knowledge of nutrition, both in health and disease.

<sup>1</sup> "Bier's Hyperæmic Treatment in Surgery, Medicine, and the Specialities: A Manual of its Practical Applications." By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; and Professor Dr. Victor Schmieden, Assistant to Professor Bier, University of Berlin. Pp. 209. With 95 figures. Philadelphia and London: W. B. Saunders Company. 1908.

<sup>2</sup> "The Elements of the Science of Nutrition." By Graham Lusk, Ph.D., M.A., F.R.S.E., Professor of Physiology at the University and Bellevue Hospital Medical College, New York City. Pp. 326. Philadelphia and London: W. B. Saunders Company. 1906.

The author discusses in detail the processes of starvation, regulation of temperature, and the ingestion of the various food-stuffs. The influence and specific dynamic action of the various forms of food are discussed. The many problems of metabolism are fairly stated, and much light thrown on derangements and modifications wrought by disease. We could have wished that greater space had been devoted to tuberculosis, but the work will be of particular value to directors of sanatoria, especially those in America, because a useful table is given, showing the cost of proteid and energy as furnished by a number of common food materials, at prices current in the eastern part of the United States.

Dr. Noel Bardswell and Mr. John Chapman have for long devoted special attention and given prolonged study to the dietary of the consumptive. The chief results of their contributions on the subject to the Royal Society are well known, and now they have wisely issued a detailed account of their researches.<sup>1</sup> They describe the general principles which should direct in the construction of dietaries for consumptives, and devote particular attention to the comparative economy of various food-stuffs. Records are given of a series of observations on the treatment of patients with meat-free diets. The work has been scientifically conceived, and carried out in a thoroughly practical form. Every physician responsible for the care of consumptive patients, or in any way answerable for the selection of a reliable dietary in hospitals or sanatoria for tuberculous cases, must study this work.

Medical officers of health, sanitary inspectors, veterinarians, dairy farmers, and, indeed, all intelligent citizens desirous of protecting our meat and milk supplies would do well to study the excellent manual recently issued by Dr. William Robertson.<sup>2</sup> The work is a thoroughly practical one, dealing with the housing of dairy stock, the care and control of the milk traffic, the regulation of slaughter-houses, and the conduct of meat inspection. A good illustration is given of tuberculous disease of the cow's udder and particulars afforded of the diagnostic use of tuberculin. A notable feature of the work, and one which makes it invaluable for reference, is the embodiment of laws bearing upon food, housing of animals, and kindred matter, with annotations prepared by Mr. R. H. Miller, the public prosecutor for the Leith Local Authority.

### THE STUDY OF INFANCY AND CHILDHOOD.

Pediatrics affords the most interesting and promising field for medical practice. Almost all human problems are now being studied in their relation to child life. All that throws new light on the processes of development and the protection and management of the coming race must be eagerly welcomed. The notable work which

<sup>1</sup> "Diets in Tuberculosis: Principles and Economics." By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S.E., Medical Superintendent, King Edward VII. Sanatorium; and John Ellis Chapman, M.R.C.S., L.R.C.P., Medical Superintendent, Coppin's Green Sanatorium. Pp. 184. London: Henry Frowde and Hodder and Stoughton. 1908. Price 6s. net.

<sup>2</sup> "Meat and Food Inspection." By William Robertson, M.D., D.P.H., Medical Officer of Health, Leith. Pp. 372. With 40 illustrations. London: Baillière, Tindall and Cox. 1908. Price 10s. 6d. net.

Professor Pfaundler and Professor Schlossmann have with rare skill and wise industry succeeded in bringing into being is one concerning which the most phlegmatic reviewer may well be enthusiastic.<sup>1</sup> We heartily congratulate all concerned in the production of this epoch-marking work. Much praise is due to the American editors and the publishers for their action in preparing so handsome and serviceable an English edition. Their reward should be sure, for these volumes must for long remain the most practical and complete work of reference for all called upon to advise as to the care of infancy and childhood. Each subject is dealt with by an expert. Every phase of pediatrics seems to have received attention. In form and substance a high standard has been attained throughout. We know of no other work so full of practical and up-to-date information for the practical physician. The subject of tuberculosis is particularly ably dealt with. The section contributed by Professor Schlossmann and admirably translated by Dr. Alfred F. Hess is a model of lucid and scientific exposition, concisely summarizing the most reliable knowledge available. The illustrations have been finely executed. Dr. B. Bendix, in the section on "General Prophylaxis in Diseases of Children," gives illustrations of the life at Charlottenburg Forest School. Professor M. Stooss writes on "Tuberculous Peritonitis," and Professor R. Fischl on "Intestinal Tuberculosis." A special section is contributed by Dr. C. Leiner on "Tuberculous Diseases of the Skin." The work is a most notable contribution to the study of disease as manifested in infancy and childhood, and no pediatrician can consider his armamentarium complete without it. The illustrations, many of which are coloured and the best reproductions of actual conditions which we have seen, are a special feature of the volumes. To see this work is to desire it. We prophesy a widespread popularity for this elegant English and American edition of the finest of German collective works on pediatrics.

One of the most hopeful signs of increasing interest in the physical betterment of the race is the great attention which is being paid to the protection and nurture and proper development of the infant. Among the many recent works which have recently appeared dealing with infants there are two to which we would direct special attention. Professor J. B. Hellier, of Leeds, has issued a new edition of his informing and excellent introductory handbook for nurses, midwives, and intelligent mothers. It is a manual which even newly qualified practitioners might do well to study.<sup>2</sup> The volume will be of service to health lecturers and visitors and all engaged in the

<sup>1</sup> "The Diseases of Children: A Work for the Practising Physician." Edited by Dr. M. Pfaundler, Professor of Children's Diseases and Director of the Children's Clinic in the University of Munich; and Dr. A. Schlossmann, Professor of Children's Diseases and Director of the Children's Clinic at the Medical Academy in Dusseldorf. English Translation. Edited by Henry L. K. Shaw, M.D., and Linnaeus La Fétra, M.D. With an Introduction by L. Emmett Holt, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York. In four volumes. Illustrated in black and white and in colours by 61 full-page plates and 430 text cuts. Philadelphia and London: J. B. Lippincott Company, 1908. Price £4 4s. net per set of four vols.

<sup>2</sup> "Infancy and Infant Rearing." By John Benjamin Hellier, M.D., M.R.C.S. Pp. 164. With 29 figures. London: Charles Griffin and Co., Ltd. 1908. Price 3s. 6d..

arduous and responsible duties of training mothers and others in the principles and methods of infant-rearing.

Dr. Ralph Vincent's work on "Babies" consists of a series of practical lectures on the present conditions of infant life, mother's milk, substitute feeding, infantile malnutrition, and other derangements of healthy infancy.<sup>1</sup> In a compact form, concisely but lucidly expressed, the main points in the modern scientific management of infants are attractively presented. The work should be read by all mothers desirous of doing the best for their children. It is a volume which might with advantage be widely distributed among nurses, midwives, and district visitors, for it is well calculated to rectify many of the pernicious practices and to destroy superstitious beliefs which still, even among intelligent and well-informed people, exercise disastrous influence on infant life.

#### MANUALS FOR MEDICAL PRACTITIONERS.

Of recent years it has been abundantly demonstrated that deficiencies in mental and physical development, morbid tendencies to consumption and other diseases, and an impairment of vitality and usefulness, often have their origin in, or are maintained or aggravated by, lesions of the nose and throat. It is particularly desirable, therefore, that the medical adviser should possess diagnostic skill in regard to this class of case. Among the numerous works which have recently been published dealing with this subject, a foremost position must be given to the masterly and thoroughly up-to-date work of Dr. Herbert Tilley.<sup>2</sup> The present volume has developed out of the handbook which the author produced in collaboration with Dr. de Havilland Hall, and is to all intents and purposes a new work. It forms one of "Lewis's Practical Series," and is an ideal manual for the practitioner, dealing mainly with symptomatology, diagnosis and treatment rather than speculative and debatable matters relating to etiology and pathology. Throughout a scientific spirit prevails. In a useful introduction main anatomical and physiological points are dealt with. As might be expected, the sections dealing with affections of the nose and its accessory cavities are particularly excellent and admirably illustrated. Tuberculosis of the larynx receives very careful consideration, and this section is one of the best of its kind ever written. It is eminently practical. A good illustration is given indicating the method of using Leduc's auto-insufflator, with the use of which every practitioner should be acquainted. The useful collection of formulæ will be of much practical service. Special praise must be given to the numerous and well-executed illustrations. Altogether the work is to be unreservedly approved, and should find a place in every medical practitioner's library.

The latest addition to the series of "Practitioners' Handbooks,"

<sup>1</sup> "Lectures on Babies: A Course of Lectures delivered at the Infants' Hospital, Westminster." By Ralph Vincent, M.D., B.S., M.R.C.P., Senior Physician to the Hospital. Pp. 113. London: Baillière, Tindall and Cox. 1908. Price 2s. 6d. net.

<sup>2</sup> "Diseases of the Nose and Throat." By Herbert Tilley, B.S., F.R.C.S., Surgeon to the Ear and Throat Department of University College Hospital, London. Pp. 539. With 126 illustrations. London: H. K. Lewis. 1908. Price 14s. net.

edited by Dr. Harry Roberts, is a very concise, explicit, and serviceable manual on aural surgery by Dr. J. Arnold Jones.<sup>1</sup> The author is an enthusiastic disciple of Mr. Richard Lake, to whom the volume is dedicated, and whose methods are frequently referred to. The object of the work is to provide practitioners "with a brief and concise account of the principles and practice of modern aural surgery," and certainly this aim has been very satisfactorily accomplished, for within well-defined limitations much useful information has been collected and succinctly and serviceably presented. Special attention has been given to methods of treatment, and particularly to the after-treatment of operations. We commend this compact and unpretentious volume to the consideration of busy practitioners.

Sir William Whitlaw's "Dictionary of Treatment" is usually to be found among the working members of every practitioner's library, and his work on "Materia Medica and Therapeutics" is well known to many generations of students, but the crowning effort of Sir William's strenuous life has just appeared in a complete and masterly "Manual of the Practice and Theory of Medicine."<sup>2</sup> This work will not only add to the author's already world-wide reputation as a great physician and a brilliant author, but will provide practitioners with just that authoritative, condensed, up-to-date, conveniently arranged, practical direction which is required for the adequate conduct of the practice of modern medicine. Wisely, as we think, the dictionary form of arrangement has been adopted, and there is a good index. Among sections which have specially interested us are those on "Phthisis" and "Tuberculosis." The former is a particularly able and highly suggestive article. As a model of precise and informing writing, distinguished in style and comprehensive in substance, it can hardly be surpassed. It is altogether remarkable in its completeness. The work as a whole is a noble monument and record of a quarter of a century of clinical observation and medical teaching. The volumes are very appropriately dedicated to Sir Clifford Allbutt, another like master of medicine.

With the advantages of modern pathological methods and the resources of laboratory procedures now available for the recognition of tuberculosis, there is a danger that purely clinical diagnostic measures and the study of physical signs should be neglected, or at all events not accorded that thorough and painstaking cultivation which they deserve. We therefore welcome such a helpful manual as that just issued by Dr. James E. H. Sawyer.<sup>3</sup> It is designed primarily for medical students. The physical signs of intrathoracic disease are well described, and much care has been devoted to the all-important subject of differential diagnosis. The work is one which

<sup>1</sup> "A Short Practice of Aural Surgery for the Use of Students and Practitioners." By J. Arnold Jones, M.B., Ch.B., F.R.C.S., Hon. Assistant Aural Surgeon to the Manchester Eye and Ear Hospital. Pp. 264. London: John Lane. 1908.

<sup>2</sup> "A Manual of the Practice and Theory of Medicine." By Sir William Whitlaw, M.A., M.D., LL.D., Senior Physician to, and Lecturer on Clinical Medicine at the Royal Victoria Hospital; and Professor of Materia Medica and Therapeutics in Queen's College, Belfast. In two volumes. Pp. 1900. London: Henry Renshaw. 1908.

<sup>3</sup> "Physical Signs of Diseases of the Thorax and Abdomen." By James E. H. Sawyer, M.A., M.D., M.R.C.P., Casualty Assistant Physician and Medical Registrar, the General Hospital, Birmingham. Pp. 188. London: Baillière, Tindall and Cox. 1908. Price 5s. net.



will be of service to clinical assistants and others taking up the study and treatment of chest diseases.

Sir James Sawyer has issued his Lumleian Lectures delivered at the Royal College of Physicians of London, dealing with various problems in cardiac pathology and treatment, in convenient book-form, which will be approved by many old students and friends of this distinguished clinician.<sup>1</sup>

A highly original and suggestive monograph dealing with problems of blood-pressure has recently been published by Dr. William Russell. The normal structure and movements of arteries and the nature of blood-pressure in relation to vessel contraction and cardiac vigour are dealt with from an original and instructive standpoint. The cause and manifestations of hypertonus and various arterial derangements are studied; the significance of sphygmographic and hæmomanometric records discussed; and the relation of angina pectoris and allied conditions to an arterio-cardiac reflex illustrated. At a time when the connection of hæmoptysis with abnormalities of blood-pressure is being discussed, and its treatment by drugs exerting influence over vascular states attempted, Dr. Russell's suggestions and conclusions merit special study.<sup>2</sup>

Dr. Oscar Bernhard's handbook of "first-aid" procedures, suited to the requirements of guides, climbers and travellers, is not as well known to English mountaineers as it deserves to be, and although it is not an absolutely new book, we have no hesitation in commending it to those who are not acquainted with it.<sup>3</sup>

Mr. Lionel F. West has prepared an excellent vade-mecum<sup>4</sup> for the mountaineer, containing particulars of rock-climbing accidents, and indicating by good illustrations and explicit text the best means of rendering first aid by means of the rope and other measures.

The eighth volume of the practitioner's reference work on medicine and surgery, ably edited by Mr. J. W. Ballantyne, has just been issued,<sup>5</sup> and contains no less than 1,037 subject-headings, many of the articles being notable, and all are contributed by experts. The work is one which deserves an appreciative reception.

#### OFFICIAL PUBLICATIONS AND PERIODICAL LITERATURE.

The last volume issued by the American Climatological Association is one of particular interest to students of the tuberculosis problem,

<sup>1</sup> "Points of Practice in Maladies of the Heart." By Sir James Sawyer, M.D., F.R.C.P., F.R.S.E., Consulting Physician to the Queen's Hospital. Pp. 96. Birmingham: Cornish Brothers, Ltd. 1908.

<sup>2</sup> "Arterial Hypertonus, Sclerosis, and Blood-Pressure." By William Russell, M.D., F.R.C.P.E., Physician to, and Lecturer on Clinical Medicine in the Royal Infirmary, Edinburgh. Pp. 194. With 36 illustrations and plates. Edinburgh and London: William Green and Sons. 1907. Price 7s. 6d. net.

<sup>3</sup> "First Aid to the Injured: With Special Reference to Accidents occurring in the Mountains." By Dr. Oscar Bernhard. Translated from the German by Michael G. Foster, M.A., M.D. Pp. 136. With 55 plates. Samaden: Simon Tanner. Price Fr. 2.50.

<sup>4</sup> "The Climbers' Pocket-Book." By Lionel F. West, M.R.C.S., L.R.C.P. Pp. 79. Manchester: The Scientific Publishing Co. Price 2s. 6d. net.

<sup>5</sup> "Green's Encyclopedia and Dictionary of Medicine and Surgery." Vol. viii. Pp. 588. Edinburgh and London: William Green and Sons. 1908.



for it contains many important articles dealing with various phases of the subject.<sup>1</sup> Dr. Paul M. Carrington has an informing and well-illustrated paper on "The Climate of New Mexico: Nature's Sanatorium for Consumptives"; Dr. J. M. Anders writes on "Hæmoptysis due to Tuberculosis"; Dr. Richard O. Otis discourses on "The Blood-Pressure as a Guide in the Treatment of Hæmoptysis"; Dr. W. J. Barlow furnishes a "Report on Two Hundred Charity Cases of Pulmonary Tuberculosis under Sanatorium Treatment at Los Angeles"; Drs. Vincent Y. Bowditch and Walter A. Griffin summarize the "Subsequent Histories of One Hundred and Sixty 'Arrested Cases' of Pulmonary Tuberculosis treated at the Sharon Sanatorium, 1891-1906"; Dr. F. I. Knight dwells on the "Importance of Supervision of Patients after leaving Sanatoria Apparently Cured of Tuberculosis"; Dr. Charles Denison describes and figures a new form of "Sleeping Canopy"; Dr. R. C. Newton insists on the importance of "Personal Hygiene in the Prophylaxis and Treatment of Consumption." Drs. A. K. Stone and C. Floyd indicate what may be accomplished by "The Daily Care of Consumptives at a General Hospital as an Aid to solving Local Tuberculosis Problems." The whole volume is a notable one, and Dr. Guy Hinsdale and his colleagues may be congratulated on the excellence and helpfulness of their year-book.

Medical practitioners are often called upon to advise in regard to the selection of a public school. To all such we would recommend the Year-Books issued by Messrs. Swan Sonnenschein and Co.<sup>2</sup> They are comprehensive and reliable, affording just the facts necessary, and providing in addition valuable information and helpful suggestions respecting preparation for life's activities. Every parent, teacher, and doctor should be acquainted with these volumes.

Under the enthusiastic support of the Countess of Aberdeen, a remarkable work is being accomplished for the mitigation of the misery wrought by tuberculosis in Ireland. We desire to call special attention to the volume recently issued containing the lectures delivered at the Tuberculosis Exhibition held in Dublin last year, under the auspices of the Women's National Health Association of Ireland.<sup>3</sup> Among the lectures here printed are able discourses by Professor William Osler, Sir Robert Mathieson, Mr. R. F. Tobin, Sir John Byers, Dr. David Lawson, and Professor J. A. Lindsay. Every student of the tuberculosis problem should possess this volume.

Those interested in the relation of Poor Law Administration to the Care and Control of Consumption will do well to read the official reports of the Special Northern District Poor Law Conference, and particularly the articles by Professor G. R. Murray and Dr. L. D. Weatherly.<sup>4</sup>

The Public Schools Winter Sports Club<sup>5</sup> has accomplished much

<sup>1</sup> "Transactions of the American Climatological Association." Vol. xxiii. Pp. 330. Philadelphia, 1907.

<sup>2</sup> "The Public Schools' Year-Book," 1908 (pp. 684, price 3s. 6d. net.); "The Girls' School Year-Book," 1908 (pp. 567, price 2s. 6d. net). London: Swan Sonnenschein and Co., Ltd., 25, High Street, Bloomsbury, W.C.

<sup>3</sup> "Ireland's Crusade Against Tuberculosis." Edited by the Countess of Aberdeen. Vol. i. Pp. 168. Dublin: Maunsell and Co., Ltd. 1908. Price 1s. net.

<sup>4</sup> "Report of the Proceedings of the Special Poor Law Conference for the Northern District." London: P. S. King and Son. 1907. Price 1s. net.

<sup>5</sup> "Public Schools Winter Sports Club Year-Book." London: Horace Marshall and Son. 1907. Pp. 127. Price 1s.

for Englishmen in revealing to them the fascinations of skiing, skating, tobogganing, curling, and the like, and providing opportunities for these delightful and health-giving winter sports in Switzerland, and the year-book of the Club contains a list of its members and peculiarly attractive descriptions and illustrations.

The recently issued year-book of the Norwegian Club<sup>1</sup> contains a well illustrated article on "The Kristiania-Bergen Railways," and notes, with reproductions of photographs, on "Wintering in Norway."

The Great Western Railway Company of England, with commendable enterprise and far-seeing wisdom, have issued an attractive series of informing and admirably illustrated manuals descriptive of the most interesting places on their system. All health and holiday seekers to the West Country should provide themselves with these elegant volumes.<sup>2</sup>

Mr. Percy Lindley has prepared for the Great Eastern Railway Company a very handy illustrated guide for Continental tourists.<sup>3</sup>

The "British Sanatoria Annual"<sup>4</sup> forms a convenient reference work to the principal private and public institutions for consumptives in this country. The descriptions of the various establishments vary much in length and fulness, and in many cases, through no fault of the Editor, the particulars given are far from being up-to-date. The illustrations are numerous and helpful.

The bulky "year-book"<sup>5</sup> issued by Messrs. Mather and Crowther is a notable volume, full of instruction and invaluable for reference, and is at the same time a guide to the art of advertising and a directory to the press of this and other countries.

The *Practitioner*<sup>6</sup> for May last is an admirable special number on "The Opsonic Method and Vaccine Therapy," the principal article being contributed by Sir Almroth E. Wright.

<sup>1</sup> "The Norwegian Club Year-Book for 1908." Thirteenth year of issue. Pp. 98. London: William Clowes and Sons, Ltd. 1908.

<sup>2</sup> These manuals—"Historic Sites and Scenes of England" (for American Travellers); "Rural London"; "The Cornish Riviera"; "South Wales: The Country of Castles"; "Southern Ireland: Its Lakes and Landscapes"; "North Wales: The British Tyrol," may be obtained at the Great Western Railway Offices, Paddington Station, London, W. Price 2s. 6d. the set.

<sup>3</sup> "Tourist-Guide to the Continent." Edited by Percy Lindley. Pp. 111. With map and illustrations. London: 30, Fleet Street, E.C. 1908. Price 6d.

<sup>4</sup> "The British Sanatoria Annual for 1907-8." London: John Bale, Sons, and Danielsson, Ltd. Price 5s. net.

<sup>5</sup> "Practical Advertising, 1907-8." Pp. 752. London: Mather and Crowther, Ltd., 10-13, New Bridge Street, Ludgate Circus, E.C.

<sup>6</sup> Published by the *Practitioner*, Ltd., 149, Strand, W.C. Price 2s. 6d.

## PREPARATIONS AND APPLIANCES.

### THE CARE OF MEDICAL CASE RECORDS.

EVERYONE engaged either in private practice or in public medical service must have often experienced the need for a ready, reliable, easily worked method of dealing with medical case papers, including temperature and weight charts, diagrams, and the bulky correspondence which oftentimes collects about a case. Case-books are sources of endless confusion and constant trouble. They were, perhaps, good enough for old-fashioned, slow-moving days, but with modern requirements for speed, accuracy, completeness, and convenience for reference they have been weighed in the balance and found wanting. Experience has shown that for the work, both of the consulting-room and the hospital, sanatorium, or other public institution, some form of filing system is a necessity. Among the many clients for the favour of medical practitioners we desire to specially recommend the excellent CRANFORD MEDICAL FILE,<sup>1</sup> which we are using with complete satisfaction. Messrs. Pulman and Sons, Ltd., the well-known firm of medical stationers and consulting-room furnishers, have introduced a thoroughly reliable four-drawer cabinet, fitted with all modern adjustments, and allowing of the vertical filing in convenient folders, arranged alphabetically, with differently coloured and stout guides of all letters, charts, and papers connected with a case. Each drawer is fitted with a lock, so absolute privacy is insured. The system is elastic, and can be modified or amplified to meet individual requirements. As a time and trouble saving appliance it is of the greatest possible service, and no busy practitioner can afford to be without some such an appliance.

### A PRACTICAL WRITING COPIER.

Every physician, and especially those in connection with hospitals, sanatoria, and like institutions, who are constantly called upon to write letters or prepare documents, of which it is desirable always to keep a duplicate copy, must have often experienced the need for a simple, easily manipulated, cleanly, effective, and inexpensive copier. To all such we commend the CERES WRITING COPIER.<sup>2</sup> It can be used with either pen and ink or pencil. The copy is produced as you write, and, being quite dry, can be filed at once. The original letter is in no way soiled, and—a point which the medical practitioner will appreciate—shows no evidence of having been copied. If necessary, two or three copies may be produced at one writing. As a convenient travelling writing apparatus or for use in the open air

<sup>1</sup> Full particulars of the various modifications of the Cranford Vertical Medical File can be obtained from the makers, Messrs. George Pulman and Sons, Ltd., 24-27, Thayer Street, Marylebone, London, W.

<sup>2</sup> Inventor, Patentee, and Manufacturer: T. Bowater Vernon, the Ceres Depot, 10, John Street, Adelphi, London, W.C. Price complete: Quarto size, 10s.; foolscap size, 12s. 6d.

this invention is unrivalled. It consists of a simple green-coloured metal case, in which is contained the supply of writing and copying paper, transfer sheets, etc., all in a compact, convenient, and readily accessible form. By a very simple contrivance the paper is adjusted and writing can be done. No doctor should be without one.

#### CLINICAL DIAGRAMS.

For use in private practice, physical examination of school children, and the investigation of cases in hospitals, sanatoria, and like establishments, the need for reliable diagrams of the various regions of the body, on which deformities, injuries, or definite lesions can be graphically recorded, must have oftentimes been experienced by every medical practitioner. Our attention has been drawn to some excellent diagrams prepared by Leonardson and Co.,<sup>1</sup> which we believe only need to be known to be appreciated. Indiarubber stamps of these diagrams are available, and doubtless will prove very popular.

#### TUBERCLE VACCINE.

Messrs. Parke, Davis and Co.<sup>2</sup> inform us that they have been appointed distributing agents for the bacterial vaccines prepared in the vaccine laboratory of St. Mary's Hospital, London, under the supervision of its director, Sir A. E. Wright. They have sent us a specimen of the tubercle vaccine (tubercle bacillary emulsion) issued with this important authorization. It is supplied in two dilutions, containing respectively  $\frac{1}{2000}$  and  $\frac{1}{3000}$  milligramme of the comminuted tubercle culture per c.c. The same firm is supplying tablets of purified tuberculin, each of which contains 10 milligrammes of the precipitated substance, which, when dissolved in 1 c.c. of sterile distilled water, forms a 1 per cent. solution for the diagnostic ophthalmic reaction for tuberculosis according to the method of Calmette. They are supplied in tubes of ten tablets, and full particulars regarding the proper procedure for conducting the test is given with each tube.

#### A HYGIENIC TOWEL DISTRIBUTOR.

The towel may prove a subtle means for the propagation of disease. An ingenious sanitary towel distributor has recently been brought to our notice, and we have had an opportunity of testing it. The "One Each Towel Distributor" is primarily intended for use in schools. It was awarded a bronze medal at the International School Hygiene Conference held last summer in London. With some slight modification it should prove of service in sanatoria, hospitals, asylums, convalescent homes, orphanages, and similar establishments. The provision of clean water in these institutions entails much trouble and expense, but in schools and hospitals at least means are seldom taken to prevent the possibility of one towel being used by many different individuals. The distributor invented by Mr. Cassels meets this

<sup>1</sup> Particulars of clinical diagrams and rubber stamps of same sent on application to Leonardson and Co., 12, Betterton Street, Drury Lane, W.C.

<sup>2</sup> Messrs. Parke, Davis and Co. have their chief British office at Beak Street, Regent Street, London, W.

difficulty.<sup>1</sup> It can be fixed to a wall or screen, and holds about 150 towels, each large enough to dry the hands. The towels are attached to a brass rod by sliding rings. The free end of the bottom towel hangs through an opening in the bottom of a closed box within easy reach of the hand. Only one towel can be withdrawn at a time, and after use it is allowed to drop to the lower end of the brass rod, where the soiled towels hang until the box needs replenishing. The towels cannot be taken away or mislaid. The folding down of the lid of the box containing the stock of towels fixes the brass rod in its position, and the closing of the door of the box bolts the lid, and the interior of the box is thus rendered inaccessible without the key. The rings can be detached from the towels for greater convenience at the laundry, but cannot be loosened while in the distributor.

#### NUTRIENTS FOR TUBERCULOUS CASES.

The use of raw meat has been strongly advocated by Galbraith and Mears in this country and by others abroad, and whatever may be its precise value in the dietary of the consumptive, there can be no doubt, in spite of the contentions of the uric-acid-free feeders, that properly prepared meat-extracts and meat preparations are often of service as stimulants and nutrients in the management of numerous tuberculous subjects. Among the many claimants for favour the products of Liebig's Extract of Meat Company, Ltd., merit commendation, for they are prepared under strict scientific supervision, Sir Henry Roscoe acting as chief adviser. We are assured that tuberculosis is practically unknown among the cattle of River Plate, where the Company's farms are situated. All stock are submitted to the tuberculin test. LEMCO is the original Liebig's extract of beef, and still maintains its high reputation as a valuable economic and palatable restorative. Oxo and NURSING Oxo are compounds of meat proteids and meat essence, seasoned and ready for medicinal, dietetic, or culinary use. They are reliable nutrients as well as effective appetizers. The Company issues an informing booklet containing many serviceable suggestions and recipes which medical practitioners, nurses, and all responsible for the dietary of tuberculous patients will find of considerable value.<sup>2</sup>

#### A CONVENIENT FOOD WARMER.

For many infants, delicate children, convalescents, invalids, and sick persons of all ages a reliable contrivance whereby milk and other forms of readily digestible nutrients and restoratives can be heated quickly and without trouble or danger will be welcomed, both by doctors, nurses, and friends, as well as by patients. And in the new Standard Hygienic Electric Food Warmer, made by Reavell Bros.

<sup>1</sup> Manufactured by Wm. Cassels, Park Place, Stirling, Scotland. Price, in yellow pine with brass rod, £2 each. Towels, including brass rings, £1 7s. 6d. per hundred.

<sup>2</sup> "Lemco Dishes for All Seasons" and full particulars of the food products prepared by Liebig's Extract of Meat Company, Ltd., can be obtained from their Head Offices, 4, Lloyd's Avenue, London, E.C.

and Co.,<sup>1</sup> such an apparatus is now available. The appliance is simple, safe, economical, most effective, and wherever an electric current is available can be readily adjusted. The electric heater warms both the bottle and its contained milk or food. It consists of an open-topped box with a metallic lining. A perforated platform supports the bottle, and beneath is a special half-incandescent lamp which provides the source of the radiant heat. The warmer is well ventilated, and there is but little danger of overheating. An additional advantage is that the lamp provides sufficient light to see the dial of a watch. The cost of current used is trivial—less than one penny for continuous use over twenty-four hours. In sanatoria, hospitals, and modern hygienic homes, which in the majority of cases are now provided with electric energy, such an appliance as that we have described must prove invaluable.

### SANITARY POCKET LININGS.

Much care is usually taken in sanatoria to provide patients with sputum flasks and pocket-handkerchiefs which may be destroyed or disinfected at short intervals; but in only too many cases no proper receptacle for these inconvenient necessities is provided, and oftentimes flask and rag are allowed to be stuffed into a dirty and absorbent pocket. Mr. Rogers has recently introduced a form of inexpensive pocket lining, easily washed and sterilized, and readily fixed by means of safety-pins to the inside of a coat or skirt pocket.<sup>2</sup> They only need to be known to be appreciated.

### A HYGIENIC TELEPHONE CAP.

Recent investigations have shown that the receiver of a telephone may become a nidus for the tubercle bacillus and other dangerous micro-organisms. In an editorial in the present issue we have alluded to the importance of this matter. We are, therefore, particularly glad to find that so enterprising and up-to-date a firm as Jeyes' Sanitary Compounds Company, Ltd., should have introduced a novel form of HYGIENIC TELEPHONE CAP.<sup>3</sup> It can be easily fitted to the receiver of any telephone and is readily replaced, and, without impairing the effectiveness of the instrument, certainly provides a precautionary measure, the need for which is rapidly becoming apparent to all users of the telephone. Those who have of necessity to use public telephones might without difficulty carry a few of these caps in their pocket, and affix them before employing the filthy instruments which are found in so many public call offices.

### ARTISTIC ADORNMENT OF HOSPITALS AND HYGIENIC HOMES.

A hospital ward or a schoolroom bereft of pictures, however artistic the washable walls may be, certainly lacks adornment which

<sup>1</sup> An illustrated booklet containing all particulars can be obtained from the manufacturers, Messrs. Reavell Bros. and Co., of Bondgate, Alnwick.

<sup>2</sup> The "Sanatoria Pockets" are made by Frank A. Rogers, of 327, Oxford Street, London, W., in various sizes, at 3s. 6d., 4s. 6d., and 5s. 6d. per dozen.

<sup>3</sup> These Hygienic Telephone Caps can be obtained from Jeyes' Sanitary Compounds Co., Ltd., 64, Cannon Street, London, E.C.

may be a source of intellectual stimulus and delight. For the hygienic and artistic decoration of hospitals, sanatoria, schools, and other public institutions, as well as to meet the requirements of the nursery and schoolroom in private homes, inexpensive high-class art plates are now being issued by the Imperial Fine Art Corporation,<sup>1</sup> and merit thorough commendation.

### THE "AUTO" TABLE FOUNTAINS.

Although introduced primarily for table-centre decoration, for which they are particularly effective and pleasing, we are of opinion that the principle of the construction of the "AUTO" TABLE FOUNTAINS<sup>2</sup> is so ingenious and simple that with slight modifications these artistic novelties might well be made of service in hygienic and medical work. The fountains, which may be obtained in either spherical or cylindrical forms, are charged with compressed air by means of an ordinary cycle pump, and can be kept ready for use for some time. Each fountain is provided with a safety valve to prevent over-pumping, a device to obviate over-filling, a regulating valve providing for the easy regulation of the height of the jet of water, and a filter which prevents the nozzle being choked. Scent or suitable disinfectants can be added to the water. By the addition of judiciously selected medicaments, a spray of distinct therapeutic value may be obtained. The fountains are made to play for from one to two hours. Having investigated this highly ingenious device for ourselves, we are of opinion that it may be adapted to serve many useful purposes. For their æsthetic value these fountains should prove very popular and find a place in every well-ordered home, and for the inmates of hospitals and sanatoria, and other similar institutions, they should prove a source of much interest and satisfaction. When surrounded by flowers, or arranged as a miniature lake in the centre of a dinner table, the effect is particularly pleasing. The inventors of this ingenious appliance would do well to extend these fountains so as to meet medical requirements. With some simple modifications the apparatus might be made of considerable value for the prolonged and regulated douching of the nose, ear, or throat, and the continuous application of medicaments to these and other parts. The reservoir should be made of glass, and all portions must be capable of being sterilized and be made of materials which cannot be injured by the use of chemical agents.

### INHALERS AND VAPORIZERS.

Although the appliances which have been introduced for the production of simple and medicated vapours are legion, the number which may be considered as satisfactory are comparatively few. Our attention has recently been drawn to two inventions of American origin which, in so far as we have tested them, are deserving of high

<sup>1</sup> The Imperial Fine Art Corporation, Ltd., 64, High Holborn, London, W.C. Plates, 2s. 6d. each, or set of 10 for 21s.

<sup>2</sup> The "Auto" Table Fountains are made in different sizes, and vary in price from 15s. 6d. to 21s. Full particulars may be obtained from the New "Auto" Table Fountain Co., 31-33, High Holborn, London.



praise.<sup>1</sup> The "SIMPLEX" VAPORIZER consists of a seamless metal boiler, having in its dome an aluminium cup with perforated bottom, in which cotton-wool is placed saturated with the prescribed inhalant. The steam is generated by means of an ingeniously constructed safety spirit-lamp, and passing through the impregnated cotton-wool, escapes from the outlet as a thoroughly medicated vapour. It can be relied on as affording a continuous medicated vapour in a form which is both safe and pleasant for the patient. In cases of bronchitis, whooping-cough, croup, and many other inflammatory conditions of the nasopharyngeal and respiratory passages, this simple and effective apparatus will be of the greatest service. The "SIMPLEX" INHALER consists of a metal vessel containing the medicated solution and boiling water, over which is placed the so-called "vapour chest," from the top of which emerges the curved tubular mouth or nose piece. Perforations in the top rim of the container permit of free ingress of fresh air. The appliance is most simple in construction, cannot get out of order, and is very effective; and for many of the morbid conditions involving throat and nose in which an inhaler is advisable it is to be thoroughly recommended.

#### AMMONIUM CHLORIDE INHALER.

The vapour of ammonium chloride has found much favour in the treatment of disorders of the Eustachian tube and other affections of the nose and throat often met with in tuberculous as well as other patients, and for the suitable administration of these medicinal fumes, many forms of inhalers have been introduced. One of the best is the "ASEPTUS,"<sup>2</sup> for while affording an abundant supply of neutral nascent chloride of ammonium vapour, it is also small, compact, portable, easy to work, and most economical in price. We have tested it, and can commend it.

<sup>1</sup> The "Simplex" Vaporizer and "Simplex" Inhaler (G. H. Bell's U.S.A. Patents) may be obtained from the European Agent, Frank A. Rogers, 327, Oxford Street, London, W.—the former in 8-ounce size at 6s. 6d., 16-ounce size 8s. 6d.; the latter at 3s. 6d. Special preparations for use with the above may also be obtained.

<sup>2</sup> The "Aseptus" Ammonium Chloride Inhaler is supplied by Mr. Charles W. Brumwell, 6, Weymouth Street, Portland Place, London, W. Price 3s. 6d.

## NOTES AND NOTICES.

### CONGRESSES, CONFERENCES, AND EXHIBITIONS.

IN the endeavour to obtain co-operation of influence and co-ordination of organization for the conduct of all forms of anti-tuberculosis work, many new forms of enterprise and efforts are being discovered and enthusiastically employed in this and other lands. Almost every civilized country now possess a National Association for the Study and Prevention of Tuberculosis. Gatherings of scientists, statesmen, and humanitarians are constantly being held in all lands for the furtherance of the anti-tuberculosis campaign.

In connection with the Franco-British Exhibition, now attracting large numbers of home and foreign visitors to London, there is a small and well-arranged tuberculosis exhibit in the hall of the Irish village. It is a reproduction, on a small scale, of the tuberculosis exhibition now on tour in Ireland. The pathological section contains specimens of tuberculous lungs and other organs. The veterinary section comprises examples of tuberculosis as met with in the lower animals. The appliances section exhibits sputum flasks, tissue-paper handkerchiefs, cheap spittoons made from cardboard and peat, milk sterilizers, and apparatus for the preparation of food for invalids and infants, and also models of chalets and simple open-air shelters, with photographs of the various Irish sanatoria. In the statistical section is shown diagrams and maps indicating the death-rate from tuberculosis in Ireland. Copies of literature distributed through the medium of the tuberculosis exhibition in Ireland are also displayed. Special features are the "contrast" bedrooms, which form a valuable object-lesson. The furniture in the "healthy" bedroom is supplied by the Kilkenny woodworkers, a national experiment in home industry. Brief lectures and demonstrations are given from time to time.

Important Tuberculosis Conferences and Exhibitions have recently been held in Dublin and other important centres in Ireland under the Viceregal patronage of the Lord Lieutenant and the Countess of Aberdeen, and to this good work His Majesty the King has extended his warm approval. From September 21 to 28 the International Congress on Tuberculosis is to be held in Washington, U.S.A., at which representatives from all parts of the world will be present. An influential executive committee for Great Britain and Ireland has been formed, Dr. J. J. Perkins acting as honorary secretary. Arrangements for travel are being undertaken by Messrs. Stockwell and Co., of 8, Beak Street, Regent Street, London, W., from whom all particulars may be obtained. It is unfortunate that the time selected should be somewhat inconvenient for many English physicians, for this country, perhaps more than any other, stands in need of enlightenment and instruction in regard to progressive measures of assured value.

We are glad to learn that arrangements are being made for the

holding of a thoroughly representative National Tuberculosis Conference and Exhibition this winter. We quote from the preliminary circular which has recently been sent to us for publication :

"Such an important gathering will appeal to all interested in and working for the physical improvement of the nation, and will have the support of Statesmen, Representatives of the Army, Navy and other public Services, Members of Parliament, of County, Borough, and Rural District Councils and Boards of Guardians ; the Medical Profession and Officers of Health ; Governors of Orphanages, Cripple Homes and many like Institutions ; Ministers of Religion, Schoolmasters and Teachers ; those responsible for the conduct of Hospitals, Sanatoria, and other establishments for the sick ; Nurses and District Visitors ; and all the many individual workers who in City and Country, at home and in our Colonies, are striving for the national welfare. During the Conference numerous Lectures and Demonstrations will be given by well-known authorities, and discussions will be held on the more important problems connected with the Tuberculosis question. Tuberculosis occurring in infancy and childhood will receive special consideration. It is anticipated that almost every aspect of the Anti-Tuberculosis Movement will be dealt with by experts. Much valuable material will thus be collected, which will go far to provide increased powers wherewith to combat the ravages of "The Great White Plague"—a preventable plague—which is now causing incalculable individual suffering, much domestic misery, and immense national loss. Under the direction of Members of the Medical Profession, a collection will be made of reliable preparations and appliances, proved to have been of service in the prevention, arrest, and treatment of the various forms of Tuberculosis. Authorities from different parts of the Empire, and Continental Leaders in the Anti-Tuberculosis Movement, will be present, and take part in the proceedings. An important section will be devoted to the consideration of the dangers of the communicability of Tuberculosis from animals to man. It is expected that leading Veterinarians will take part in the Conference, and an exhibition of specimens illustrating tuberculous disease in cows and other domestic animals is to be arranged." Evidently such a gathering may be expected to exercise a far-reaching educational influence, and all interested in the extermination of tuberculosis, the bane of our national health, happiness, and prosperity, will welcome and assist in such a National Conference and Exhibition.

#### DAY CAMPS AND OPEN-AIR SCHOOLS.

To Germany and America must be given the credit for having demonstrated the value of Day Camps for Consumptives. The Walderholungstätten, particularly in Berlin, have proved of immense service, and the Mattapan Day Camp, the pioneer among American camps, organized by the "Boston Association for the Relief and Control of Tuberculosis," has fully justified its formation, as is clear from the report of Dr. David Townsend, the physician-in-charge, and his assistants. Their conclusions are so suggestive and instructive that

we venture to quote them: "Experience has taught us that such a camp as the above, when properly conducted, is of value on educational lines. And is also of value as it removes, for a time, the sources of infection from the community and the homes; as it enables some cases to obtain admission to a sanatorium who could not otherwise go; as it obviates in some cases this necessity; as it enables cases who for some reason or other could not go to a sanatorium, although suitable, to obtain proper care; and as it helps to complete the cure in some cases who have been discharged from a sanatorium."

Open-air schools for children have been enthusiastically taken up in Germany, and the experiment tried under the direction of the Education Committee of the London County Council last year proved so successful that we are glad to see that additional open-air schools are to be established this summer. It is much to be hoped that Educational Authorities throughout the country will establish open-air schools for all tuberculous and tuberculously disposed scholars under their care.

#### TUBERCULOSIS IN INFANCY AND CHILDHOOD.

The special number of this Journal issued last July, dealing with "Tuberculosis in Infancy and Childhood," met with such favour and awakened so widespread an interest that the Editor was induced to undertake the preparation of a thoroughly representative work dealing with all phases of the tuberculosis problem as met with in early life. No less than forty well-known British, American, and European medical authorities have contributed to the work, which will be published in the early autumn by Messrs. Baillière, Tindall and Cox.